From n5cm at rtconline.com Sun May 1 05:01:06 2011
From: n5cm at rtconline.com (KEN)
Date: Sun, 1 May 2011 04:01:06 -0500
Subject: [BoatAnchors] Radioactive fallout.
Message-ID: <E37DAF94DFBE4EDABEB6BCFC86688CD2@MYCONFUSER>

Hi Gang,

I discovered something last night you should know about! My wristwatch's hour and minute hands would glow for awhile after being taken out of

daylight or artificial light. In a pitch dark bedroom, during the night and early hours, no glow was discernable. Until last night, I realized the hands

continued to glow all night in a pitch dark bedroom! This can mean only one thing in my mind - the radio-active fallout radiation is causing the

watch's hands to glow! Lord help us!   If your wrist watch has acted the same in the past, check it now during the night and let us know what

it does. 73,

Ken   N5CM

From hbreuer at debitel.net Sun May 1 05:18:48 2011
From: hbreuer at debitel.net (Heinz Breuer)
Date: Sun, 01 May 2011 11:18:48 +0200
Subject: [BoatAnchors] Radioactive fallout.
In-Reply-To: <E37DAF94DFBE4EDABEB6BCFC86688CD2@MYCONFUSER>
References: <E37DAF94DFBE4EDABEB6BCFC86688CD2@MYCONFUSER>
Message-ID: <4DBD2578.90502@debitel.net>

Why spam the lists with such a bullshit? There is no traceable fallout
from Fukushima.
vy 73 Heinz DH2FA, KM5VT

Am 01.05.2011 11:01, schrieb KEN:
> Hi Gang,
>
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>
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in the past, check it now during the night and let us know what
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> it does. 73,
>
> Ken   N5CM
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>
>

From arc5 at ix.netcom.com Sun May 1 08:05:35 2011
From: arc5 at ix.netcom.com (David Stinson)
Date: Sun, 1 May 2011 07:05:35 -0500
Subject: [BoatAnchors] Radioactive fallout.
In-Reply-To: <E37DAF94DFBE4EDABEB6BCFC86688CD2@MYCONFUSER>
References: <E37DAF94DFBE4EDABEB6BCFC86688CD2@MYCONFUSER>
Message-ID: <4DDCB35353214FBDAD3EF689CD28838A@DaddyPC>

Dang it! I told the CIA about the gray aliens coming at
night on those nuclear jet skis with the leaky reactors!
But do they listen? Noooooooooo......
And your watch is just a small proof!

If their leaking outer-space radiation nuke-juice can
make a watch glow....... what's it doing to your heart?
The fillings in your teeth! Have you checked them in
a mirror in a very, very dark room? Look ohhhh soooo
close.... wait.... THERE! You see it! That tiny glow
in your mouth!   OMG!   What's it doing to...
  YOUR BRAIN?!

Only one thing can save you after being contaminated
by deadly alien jet-ski reactor nuke-juice:

Turn on all your boatanchor radios and let them get
good and warm. Take off all your clothes.
Go to the fridge and slather your entire body with
unsalted (important!) butter. Now climb on top of all
your radios and slowly turn yourself over and over for
about four hours. The electrical field from the transformers
and tube vibrations will sub-atomically re-confabulate
the quantum mechanical spin ratio of the contamination

and draw it into the butter. Some of it will get into your
radios, yes, but is a little clean-up worth your life??
That's why we use unsalted butter.
After four hours, go shower with hot water and
unscented soap. You're washing nuclear waste down
into the sewer system, which would normally be a crime,
but this is an emergency. I won't tell if you don't.

To prevent this in the future- Before going to bed each
night, wrap yourself in aluminium foil (shiny side OUT)
and hang either garlic or something on which a cat
has peed at each bedroom window- aliens can't stand
the smell and they will go abduct your rude neighbor
instead of you.

No need to thank me.... I'm glad to help.

From oldradio at comcast.net Sun May 1 09:14:54 2011
From: oldradio at comcast.net (oldradio at comcast.net)
Date: Sun, 1 May 2011 13:14:54 +0000 (UTC)
Subject: [BoatAnchors] NEARFest - a big success! Thanks Mr. Mike & crew
In-Reply-To:
<1841756003.1983643.1304255581145.JavaMail.root@sz0128a.westchester.pa.mail.comcast.net>
Message-ID:
<99867487.1983701.1304255694355.JavaMail.root@sz0128a.westchester.pa.mail.comcast.net>

Thanks to the Crew and perfect weather, NEARFest was a big success! Thanks Mr. Mike & Crew.

I met some new ones, had time to visit with my old friends.

http://www.near-fest.com/

73, John Dilks, K2TQN

-.-

From knjhanlon at msn.com Mon May 2 20:23:51 2011
From: knjhanlon at msn.com (JAMES HANLON)
Date: Mon, 2 May 2011 18:23:51 -0600
Subject: [BoatAnchors] Howard 490 Manual?

```
Message-ID: <SNT106-DS24AFFFC2F7498368571B68A09E0@phx.gbl>
```

Y'all,

Does anyone have a manual for the Howard 490 receiver? I have a copy of Howard Bulletin no. 101 that I got years ago from HI Manuals that I would describe as a technical advertising brochure. From this and from the schematic that was glued to to bottom of the receiver I've been able to dope things out, even though the schematic from the receiver has holes poked in it to reach the alignment points inside. I just wonder if there was ever anything more in the way of a manual produced for this radio.

Thanks,

Jim Hanlon, W8KGI

```
From pekelney at rspeng.com  Tue May  3 13:43:17 2011
From: pekelney at rspeng.com (richard pekelney)
Date: Tue, 3 May 2011 10:43:17 -0700
Subject: [BoatAnchors] Waveguide installation
Message-ID: <34DDAB4B-97CC-497C-B0C2-E5E94C4F5AC9@rspeng.com>
```

Folks,

We have added a new manual to the Historic Naval Ships Association web site:
Transmission Lines Waveguides and Fittings, NAVSHIPS 900,081, 1945,
decribes radio and radar transmission lines, cables and waveguides
aboard ship. Museum ships stabilizing or restoring their radios or
radars systems will appreciate many parts of the manual. Esp. handling
radar waveguide.
http://hnsa.org/doc/waveguide/index.htm

You should also take a look generally at:
http://hnsa.org/doc/index.htm
There are some radio and radar manuals that should be of interest to the group.

rich

```
From wb0eq at yahoo.com  Tue May  3 19:10:05 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Tue, 3 May 2011 16:10:05 -0700 (PDT)
Subject: [BoatAnchors] Calibrating BA test equipment
Message-ID: <233597.47341.qm@web45610.mail.sp1.yahoo.com>
```

Been having a good time working thru the pile of BA test equipment in the shack.
Some has been easy, some hasn't!

1. My RCA WV-98C VTVM (classic 12AX7 & 6AL5 ct.) was easy as pie. Not all ranges

are calibratable, but nevertheless, even the "dependent" (non adjustable) ranges were within 1-2%! I find that amazing after 35 years. Unit is well constructed, high quality, stable resistors obviously used. This was not a consumer grade meter, more like service shop level, so is it semi-industrial grade?

And where do you find such a large, generous, clear meter face?

2. I have kept my Heath HD-1 harmonic distortion meter for a long time, it's a flea market special, covers 20 - 20k Hz. I use it when adjusting AF generators for minimum harmonic distortion; can also, using an RF probe, measure Amplitude Modulation distortion. Its residual HD is well under 0.1% after calibration. You can monitor what's left of the signal after the notch filter (the distortion) with an oscilloscope. This residue is interesting & sometimes informative.

3. Krohn-Hite 5700 function generator. Unit is in half-shoebox size cabinet. Does 0.002 Hz to 20 MHz, sine, square & triangle waveforms.

Did you guess it has no tubes in it? Yes, quite right, it's a just-before IC design, all discrete semiconductors on two separate PC boards. I include it here because I'm sure that some BA's also suffer from the same problems of drifting circuitry.

It has the most complex ct. I've ever seen! Has some kind of interlocking square & triangle generators, is push pull & DC coupled throughout (like a good 'scope). From those two, a sine wave is generated by a "ladder" circuit of diodes. Residual DC output is around 1 mV at full output. Whew.

Vy difficult to get proper freq. tracking of the dial. The dial covers 3 decades at once, 0.2 to 200 units, times the multipliers of 0.01 to 10k in decade steps. I had to do a lot of back & forth "trimming" of existing calibrating resistors to get things right. Interestingly, the existing cal. resistors were spot on in value; evidently the *rest* of this circuitry drifted & I was horsing it back into the stable indirectly.

BTW, freq. adjustment ct. uses a large ww resistor, not Wien Bridge here, so no vari cap present such as in an HP 200CD.

It took me years to find paper on this unit & it cost more than the unit itself. It showed me that my unit was Rev. B whereas the final rev on these was Rev. L. The mods involved a lot of resistor changes & additions. I decided to to go ahead with the upgrade. End result: less distortion & easier calibration.

4. Next up is an HP 200 CD. It's got coupling caps that are leaking oil! Black Beauties?

Also in the bull pen is an HP 410B, the kind with the vacuum tube diode in its RF probe can.

I'll keep you all posted. Thanks for tuning in.

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From gumbear at pacbell.net Tue May 3 20:01:38 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Tue, 3 May 2011 17:01:38 -0700
Subject: [BoatAnchors] Calibrating BA test equipment
References: <233597.47341.qm@web45610.mail.sp1.yahoo.com>
Message-ID: <001e01cc09ee$742ffc30$619e480c@KB6NAX>

> Been having a good time working thru the pile of BA test equipment in the shack. Some has been easy, some hasn't! ....

John, you will find the two coupling caps in the 200CD to be somewhat leaky, particularly in earlier vintage units. You will also find the molded mica looking cap across the AC probe output to be leaky and also a pair of caps at the first 12AU7 stage grids to be leaky, making calibration impossible or at least unreliable. Remove the line bypass caps found in earlier production units, they bring in RF noise and were later omitted. You might find one or more wirewound calibration pots to be intermittent due to failing element terminations. Can be fixed with silver bearing epoxy.

Arden Allen
KB6NAX

Fear always springs from ignorance.
-Ralph Waldo Emerson

From spr at earthlink.net Tue May 3 19:47:46 2011
From: spr at earthlink.net (spr at earthlink.net)
Date: Tue, 3 May 2011 16:47:46 -0700 (GMT-07:00)
Subject: [BoatAnchors] Calibrating BA test equipment
Message-ID: <301307.1304466467269.JavaMail.root@mswamui-chipeau.atl.sa.earthlink.net>

HI John,

Very interesting stuff. All my test gear is calibrated, BA and otherwise. My fluke 87 DVM is my bench secondary standard.

As to the HP210B: I have one of these and don't like it. Yes, it does have 100 meg input impedance, but the gain (not the zero, bu the *gain* is not stable. Teh amplifier has no feedback around it, which might explain this instability.

I also have an HP 210C, the same size as a 204 oscillator, and it's much better. That's on my bench. It's mixed sand and hollow state, but part of the gain is a chopper tube amp, using neon bulbs and CdS photoresistors to to the chopping. There is a 25 Meg 1% resistor buried in the middle that is usually aged up (I have been through three of these). The way the circuit is designed, it all interacts so you gotta change out this resistor. It turns out that you can still get high value 1% resistors in enough values to to what's needed--Digi-Key or Mouser, forget which.

My favorite BA audio oscillator is either the Switch selected Heath from the mid-50s or the Eico 378, both about 0.05% thd, much better than an HP 200CD.

I alos have a GR VTVM, ealry 60s probably, with a log meter scale, so you only need x10 range switching rather than x31.6 or x2/x5. I forget the model number, also has 100 Meg Rin.

Regards,

Scott

-----Original Message-----
>From: John Sehring <wb0eq at yahoo.com>
>Sent: May 3, 2011 4:10 PM
>To: boatanchors at theporch.com
>Subject: [BoatAnchors] Calibrating BA test equipment
>
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>BTW, freq. adjustment ct. uses a large ww resistor, not Wien Bridge here, so no vari cap present such as in an HP 200CD.
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>
>I'll keep you all posted. Thanks for tuning in.
>
>--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada
>
>____
>BoatAnchors mailing list
>BoatAnchors at theporch.com
>https://minime.theporch.com/mailman/listinfo/boatanchors

From gumbear at pacbell.net Wed May 4 21:27:32 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Wed, 4 May 2011 18:27:32 -0700
Subject: [BoatAnchors] The American Way
Message-ID: <004301cc0ac3$9f65c850$099e480c@KB6NAX>

I get kicked in the teeth, I kick back }:-(

Arden

----- Original Message -----
From: [Arden Allen]
To: Cambridge SoundWorks Support
Sent: Wednesday, May 04, 2011 6:22 PM
Subject: Re: CSW - Customer Service Request (Repairs)
(KMM36152696I15977L0KM)

That's what I expected you to say.
You no doubt are desperate to sell your stuff and then disregard the customers who keep and maintain their entertainment equipment and also those who must purchase second hand items to enjoy some entertainment. Sad but all too much the American way.

I'll pass the word, you can be sure.

Arden

----- Original Message -----
From: Cambridge SoundWorks Support
To: Arden Allen
Sent: Wednesday, May 04, 2011 10:01 AM
Subject: Re: CSW - Customer Service Request (Repairs)
(KMM36152696I15977L0KM)

Dear Arden,
I'm sorry, but Cambridge Soundworks no longer repairs the 88cd and we never make schematics available.

Please retain all the previous correspondence when replying to this email.
Best Regards ,
Brad
Cambridge SoundWorks
Sales & Support

Original Message Follows: ------------------------

==========================
Subject: CSW - Customer Service Request (Repairs)
Name: Arden Allen

Inquiry Type: repairs

Product: [Henry Kloss model 88CD radio/cd player]
Detailed Description of Inquiry:

I gather you have never supplied servicing information to anyone for repair of your products. I have a model 88cd that has low sensitivity in both AM and FM. Probably a failed AM/FM IF chip. A schematic would be immensely helpful. Please reply with what you can or won't do for me, it would be greatly appreciated. ....

From infomet at embarqmail.com Thu May 5 13:43:20 2011
From: infomet at embarqmail.com (Wilson Lamb)
Date: Thu, 5 May 2011 13:43:20 -0400
Subject: [BoatAnchors] The American Way
References: <004301cc0ac3$9f65c850$099e480c@KB6NAX>
Message-ID: <F987198F234043B7AD2891112ABDB852@wilsonspc>

Looks like would-be boutique/low end audiophool attractor stuff.

Buy a big name brand.
>From a business with service dept., or service centers.
Maybe even with a showroom, and people.

WL

----- Original Message -----
From: "Arden Allen" <gumbear at pacbell.net>
To: "Old Tube Radios (new)" <boatanchors at minime.theporch.com>
Sent: Wednesday, May 04, 2011 9:27 PM
Subject: [BoatAnchors] The American Way

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> Arden
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> helpful. Please reply with what you can or won't do for me, it would be
> greatly appreciated. ....
>
>
>

From spr at earthlink.net Thu May 5 13:48:36 2011
From: spr at earthlink.net (spr at earthlink.net)
Date: Thu, 5 May 2011 10:48:36 -0700 (GMT-07:00)
Subject: [BoatAnchors] The American Way
Message-ID: <28922980.1304617717258.JavaMail.root@mswamui-chipeau.atl.sa.earthlink.net>

Hi Wilson,

Actually, the model 88 radio (I have one, sans CD) is a very good sounding small stereo radio. It sits under my computer monitor and it's the audio monitor for my computer. I measured it flat down to 50 Hz, and it's pretty small! Very good value, good performance, no audiophool stuff this.

I think it was one of Henry Kloss' (the 'K' in KLH, among other companies) last designs, and I bought it to use and to honor Henry.

Lots of companies now will never release service data. Take Metcal, a premier manufacturer of high-tech temperature controlled soldering systems: they won't fix my power supply, and they won't release the schematic, either. Jerks! However, they make a truly fabulous soldering iron--very small, temperature controlled, and LOTS of heat when you need it. I found a schematic for a related model and fixed mine, whew!

I *hate* this policy! Logitech and Kensington do it for their trackballs, too, and these are major brands not operating in the Audiophool space. The policy violates the 'only three choices' rule: lead, follow, or get the ^^$$##!! out of the way.

Grumblegrumblegrumble,

/scott

-----Original Message-----
>From: Wilson Lamb <infomet at embarqmail.com>
>Sent: May 5, 2011 10:43 AM
>To: Arden Allen <gumbear at pacbell.net>, "Old Tube Radios (new)" <boatanchors at minime.theporch.com>
>Subject: Re: [BoatAnchors] The American Way
>
>Looks like would-be boutique/low end audiophool attractor stuff.
>
>Buy a big name brand.
>From a business with service dept., or service centers.
>Maybe even with a showroom, and people.
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>> greatly appreciated. ....
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>
>____
>BoatAnchors mailing list
>BoatAnchors at theporch.com
>https://minime.theporch.com/mailman/listinfo/boatanchors

From navy.radio at gmail.com Thu May 5 14:55:33 2011
From: navy.radio at gmail.com (Nick England)
Date: Thu, 5 May 2011 14:55:33 -0400
Subject: [BoatAnchors] The American Way
In-Reply-To: <28922980.1304617717258.JavaMail.root@mswamui-chipeau.atl.sa.earthlink.net>
References: <28922980.1304617717258.JavaMail.root@mswamui-chipeau.atl.sa.earthlink.net>
Message-ID: <BANLkTimCLAYJcor3ghr_hvp9ZiwsjNnb6w@mail.gmail.com>

Let's hear it for fixer-friendly Boatanchors! - Heathkit, Johnson,
etc. even put schematics in their catalogs and ads...
cheers & see you at Dayton,
Nick K4NYW
www.navy-radio.com

On Thu, May 5, 2011 at 1:48 PM, <spr at earthlink.net> wrote:
>
> Lots of companies now will never release service data.

From gumbear at pacbell.net Thu May 5 17:12:51 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Thu, 5 May 2011 14:12:51 -0700
Subject: [BoatAnchors] Information Question
References: <00a401cc0ac9$a5d20310$f1760930$@comcast.net>
Message-ID: <005101cc0b71$83fba9a0$f69e480c@KB6NAX>

> If you know, typically, what was this fluid and why was it in the sealed can? Was it there as a coolant or there to protect the contacts?

It sounds like a slightly pressurized inert fluid that prevents contact erosion by arc suppression that evaporates when released to the lower pressure atmosphere.

Arden Allen
KB6NAX

Adopt a shelter dog,
save an innocent life,
and make a friend forever =:-)

From artleb at earthlink.net Sat May 7 19:47:30 2011
From: artleb at earthlink.net (Art Lebermann)
Date: Sat, 7 May 2011 16:47:30 -0700
Subject: [BoatAnchors] FS: 500 watt AM broadcast transmitter
Message-ID: <380-22011567234730562@earthlink.net>

FOR SALE: CCA model 500D AM broadcast transmitter, on 1590 KHz. Has all original iron, but PCB caps have been removed. Asking $500, OBO. Pick-up only. Transmitter is in Wayne, Nebraska. More details on request.

Art Lebermann
W6REQ
artleb at earthlink.net

From wb0eq at yahoo.com Sun May 8 14:27:53 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Sun, 8 May 2011 11:27:53 -0700 (PDT)
Subject: [BoatAnchors] Calibrating BA test equipment -- more
Message-ID: <159241.69569.qm@web45603.mail.sp1.yahoo.com>

Arden,

> Been having a good time working
> thru the pile of BA test equipment in the
> shack. Some has been easy, some hasn't!
> ....
>

As always, a super good response! I still have ur response to me from 7 years ago on cking whether the AC diode in HP 401B is good or not. I seem to remember that you have or had 25 410B's!

> John, you will find the two coupling caps in the 200CD to
> be somewhat leaky,
> particularly in earlier vintage units.

Will get to that next. P.S. Just attended a local hamfest; I was looking a soft carrying case, found an HP 200CD inside; seller said, "It's closing time, I'll take $2 for it". Needless to say...Four of us had car pooled to the flea mkt in a Honda Civic & it was packed full on return trip.

[On the HP 410B] You will
> find the molded mica
> looking cap across the AC probe output to be leaky and also
> a pair of caps
> at the first 12AU7 stage grids to be leaky, making
> calibration impossible or
> at least unreliable.?

Yes, on DC calibration, I had no trouble matching tubes, getting enuf zeroing action, cking them for gas & calibrating, seeing good stability of DC readings.

But on AC calibration having all sorts of intermittents, drifty readings, etc.
AND, moving the function switch caused the pilot light to change brightness!!!
Oh, Short City here. Found selenium rectifier shorted in both directions, replaced with suitable Si diode; it functions on Ohms only.

Next up per ur suggestions, will replace the presumably leaky 0.005 uF caps, maybe I'll just replace them all for good measure; they are a mixture of disc ceramics & micas. Funny, one grid had a mica to ground, the other a disc ceramic to ground.

I'll do the micas first & see what happens. Use my Sprague TO-6A to ck their insulation resistance.

The stages in the 410B are DC coupled & of very high Z; even an 11 meg VTVM loads 'em down a lot.

> Remove the line bypass caps
> found in earlier
> production units, they bring in RF noise and were later
> omitted.?

This an interesting question to me: Sometimes I see 0.10 uF disc ceramics from both AC line sides to equipment ground, sometimes not. I always thought they're there to prevent stray RF from getting into equipment, but maybe not?

> You might
> find one or more wirewound calibration pots to be
> intermittent due to
> failing element terminations.? Can be fixed with
> silver-bearing epoxy.

Haven't gotten to AC cal yet which has many WW pots to adjust. Good suggestion to fix them if need be.

> Arden Allen
> KB6NAX

> Fear always springs from ignorance.
> -Ralph Waldo Emerson

Amen, brother Arden!

--John WB0EQ

From wb0eq at yahoo.com Sun May 8 14:46:26 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Sun, 8 May 2011 11:46:26 -0700 (PDT)
Subject: [BoatAnchors] Fwd: Calibrating BA test equipment
Message-ID: <403185.65083.qm@web45615.mail.sp1.yahoo.com>

John,

You're the first person who's been able to explain the 5700's circuit to me! I'm saving ur note for future. My ignorance stems from having only one function generator in my shack & I never worked on it before.

It too has many adjustments, mostly to zero the outputs of many DC coupled stages to less than 0.5 mV! Some are interlocking. There are only 3 pots for minimizing sine wave distortion.

The Wavetek frequency dial manufacturing process--holy cow! I assume the freq tracking was excellent!

Have noted your experience with bad insulation on wire to grids of HP 401B. Makes sense, these are very high Z stages, even an 11 meg input Z VTVM loads them a lot, so wire insulation vy important. If I have any teflon wire around I'll do ur mod.

I remember an Exar IC, 2206(?) inexpensive chip that could do sine, triangle & square waves. How good could it do?

Thanks, John

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

> Hi John,
>
> Don't know anything specific about the Krohn-Hite function
> generator, but was an
> engineering tech at Wavetek starting in 1966, so did learn
> a bit about function generators :)
>
> The interlocking square & triangle generators is a
> standard circuit that's been used everywhere
> from the early HP tube type FG's, through the single IC
> FG's, up until the modern digital generators.
> A square wave is applied to an active integrator to produce
> a triangle.? When the triangle reaches
> the + or the - peak, the square wave is switched to the
> opposite polarity, so the triangle then
> starts ramping back in the opposite direction.? The
> decade range of the frequency is controlled
> with the switched R and C values of the integrator, but the
> freq dial controls a voltage controlled gain
> amplifier which adjusts the voltage level of the square
> wave fed back to the integrator input.
>
> Calibrating the Wavetek FG's, step one was setting the
> power supply voltages accurately.? Step
> two was adjusting the triangle peak switch points.?
> The triangle peaks were measured with
> Type "W", 1A7, or 7A13 Differential Comparator scope
> plug-ins to "exactly" + and - 2.50 volts.
> The overall accuracy was very much dependent on getting
> this setting right.? Any offset of the

> Any voltage offset of the integrator and VCG stages was
> adjusted out by adjusting the square wave
> for 50% symmetry.? The dial was custom engraved on a
> DC test fixture to compensate for any
> non-linearities in the freq control pot, so didn't have the
> tracking adjustment problems you had with the KH.
>
> Worst part of the calibration of the 1966 versions was
> adjusting the sine distortion, which was 8 interacting
> pots adjusting voltages in the diode ladder.
>
> Had in interesting problem with a HP 410B once that
> wouldn't zero adjust.? Turned out the PVC insulation
> on the wire going to the vacuum tube gird was breaking down
> and leaking.? Replaced with teflon wire
> and no more problems.
>
> I'm partial to old test equipment myself.
>
> John
> http://www.jlkolb.cts.com/

From wb0eq at yahoo.com Sun May 8 15:25:57 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Sun, 8 May 2011 12:25:57 -0700 (PDT)
Subject: [BoatAnchors] CRT question
Message-ID: <556252.12605.qm@web45616.mail.sp1.yahoo.com>

I know I've got everything I could want in the BA department in my shack = out of space!

But...a Tektronix 212 miniature CRT-based o'scope followed me home from last flea market. It was only $25(!) & in excellent physical shape. Mercifully, no NiCad battery leakage!

Only problem (so far) is that the Intensity control behavior: CRT brightness increases smoothly from zero to about mid-point @ maximum brightness (none too bright however) and then back to zero as intensity control is rotated past half-way point to its max. Focus & astigmatism are ok.

Yes, I know this is a ss unit but it has a tube-type CRT.

Any thoughts on this problem? Weak/bad CRT? There is an internal "CRT grid bias adjustment" (and focus & trace rotation) which I haven't gotten to yet.

I have found MIL version of ops & service manual on line (81 pgs), one place is

BAMA's Edebris site (this page is the catalog for all the Tek stuff they have, including #212):

http://bama.edebris.com/manuals/tek

Tnx in advance for any assist.

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From wb0eq at yahoo.com Sun May 8 15:38:08 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Sun, 8 May 2011 12:38:08 -0700 (PDT)
Subject: [BoatAnchors] FYI carbon resistor drift
Message-ID: <70618.1539.qm@web45616.mail.sp1.yahoo.com>

Been having a great time measuring stuff with my newly-calibrated Fluke 27.

Cked all my resistance substitution boxes (Eico, Heath, Sencore). All have carbon composition resistors (5% or 10%) and are many decades old.

Almost ALL have drifted high by about 20%. That's consistent if nothing else! I could just relabel the switches with their RETMA values + 20%!

Of course these resistors have never had voltage across them & been stored inside so no stresses on them, ever. We live in a rather dry climate, RH mostly around 30%.

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From gumbear at pacbell.net Sun May 8 15:55:54 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Sun, 8 May 2011 12:55:54 -0700
Subject: [BoatAnchors] Calibrating BA test equipment -- more
References: <159241.69569.qm@web45603.mail.sp1.yahoo.com>
Message-ID: <004501cc0db9$f45517f0$3c9e480c@KB6NAX>

Hi John,

410B - you will notice there is capacitor across the output of the AC probe diode, referring to the schematic. It is mounted on the back side of the probe connector board. That cap is usually found to have enough leakage to screw up the AC function. It can be replaced with a plastic film cap, it's not critical.

The caps at the grids of the 12AU7 first stage are RF killers. Ceramic disks are fine.

The AC probe diode filament is supplied via a ballast bube and wirewoud pot filament voltage adjuster. Check the diode to see if it's the older 5 volt filament or later 6.3 volt filament type and set voltage per manual instructions.

Line bypass caps in equipment are for keeping RF out of the equipment internal circuitry by bypassing the RF around the internal circuitry, shorting the RF to ground, if you like. But when measureing voltages by connecting to internal circuits of equipment the voltmeter with bypass caps intrduces RF into the circuit being measured. Thus HP discovered the line bypass caps in the 410B to be more of a problem than a correction to a problem.

As always, when performing measurements you must take into consideration the TOTAL circuit you create when connecting test equipment to the unit under test.

And, oh yes, the wiring to the first grids can be leaky, usually found in early production 410B's. A bake out will not cure the problem. Ordinary PVC wire has plenty high insulation resistance, it's just that some of the wire HP used for some unknown reason became leaky. No need to look for exotic wire to replace the leaky one or two leaky wires you may find.

Use a lubricating, i.e., moisture repellant contact cleaner on the connector board, switch wafers, and tube sockets to avoid problems with high humidity conditions.

If a 410B does not settle down after a half hour of operation after a cold start then you have leakage, faulty component, or tube problems. Like picking fleas off of a stray dog =:-(

Boatanchors need good grooming......

Arden Allen
KB6NAX

The great pleasure of a dog is that you
may make a fool of yourself with him
and not only will he not scold you,
but he will make a fool of himself too.
-Samual Butler

From gumbear at pacbell.net Sun May 8 16:21:57 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Sun, 8 May 2011 13:21:57 -0700
Subject: [BoatAnchors] Some times you get more than you pay for
Message-ID: <004f01cc0dbd$97d4fdc0$3c9e480c@KB6NAX>

I'm a Tektronix 503 oscilloscope addict. I'm incurable. It's worse than my 410B collecting that got me a garage full of them. For years I was able to hold off after having acquired six 503's, always having one on the bench for joyful use on my audio projects. But lately I broke down when I heard the unmentionableBay siren. There they were, like dogs at the shelter hoping for a new home before they take that trip down the hall to eternity. One was a half hour's drive from here so after it I went. When I got the 503 home I was in for a shock. I had a hint when I picked up the scope something was different because it had belonged to a now silent key and it was painted grey instead of Tek's lovely sea blue/green, I wasn't prepared for the surprise I received when I popped the covers off. My first impression was, OMG, this was a hacker's paradise! The next hint towards understanding my new enigma was the serial number, 95. Yep, a unit made towards the end of the first production run of 503's, looking more like a pre-production pilot run with a host of adjustments the subsequent owner's fingers could not resist. Some of the internal chassis brackets were made of plain sheet brass, something you almost never find in established production equipment, it's too expensive and corrosion susceptible. The vertical and horizontal channel sensitivity voltage divider resistances consisted of paralled resistors, no custom values as in established production units. Well, this "project," I guess, will introduce me into the realm of test equipment antropology like I've never been there before. Shhheeeesshhhh! I'm damn sure glad I'm now retired....

Arden Allen
KB6NAX

Adopt a shelter dog,
save an innocent life,
and make a friend forever =:-)

From spr at earthlink.net Sun May 8 17:51:12 2011
From: spr at earthlink.net (Scott Robinson)
Date: Sun, 08 May 2011 14:51:12 -0700
Subject: [BoatAnchors] CRT question
In-Reply-To: <556252.12605.qm@web45616.mail.sp1.yahoo.com>
References: <556252.12605.qm@web45616.mail.sp1.yahoo.com>
Message-ID: <4DC71050.6030409@earthlink.net>

Hi John,

I'd take an ohmmeter to the brightness pot and see if it's open half way around.

The last two weeks, I've been working on two Tek 5400 scopes. They aren't mine, they belong to the California Historical Radio Society, of which I'm the VP.

One shorted tantalum bypass cap, one failed Darlington power supply pass element, and two failed TO92 transistors later one of them is all working but the trigger output of one of the vertical plug-ins. That one is a pain to fix because 1) I don't have an extender (suggestions welcome) and 2) The board layout doesn't match the unit I have, making finding things a big pain.

I don't yet know what's wrong with the other; the LV supplies re all OK. Symptom is no trace.

You orobalby know this already, but in a Tek 212 the NICad is the main filter cap, so the battery has to be at least somewhat serviceable or the 'scope won't work right.

Happy sleuthing,

/scott

On 5/8/11 12:25 PM, John Sehring wrote:
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>
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> Only problem (so far) is that the Intensity control behavior: CRT brightness increases smoothly from zero to about mid-point @ maximum brightness (none too bright however) and then back to zero as intensity control is rotated past half-way point to its max. Focus& astigmatism are ok.
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>
>   http://bama.edebris.com/manuals/tek
>
> Tnx in advance for any assist.
>
> --John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada
>
> ____
> BoatAnchors mailing list

> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>

From gumbear at pacbell.net Sun May 8 18:17:55 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Sun, 8 May 2011 15:17:55 -0700
Subject: [BoatAnchors] Some times you get more than you pay for
References: <004f01cc0dbd$97d4fdc0$3c9e480c@KB6NAX>
     <712486593-1304890868-cardhu_decombobulator_blackberry.rim.net-1434423559-@bda2490.bisx.prod.on.blackberry>
Message-ID: <005c01cc0dcd$cbdc4910$a89e480c@KB6NAX>

> Arden, if you'd be so kind, what's the great things about the 503? I don't have a scope.

Hi Les,

I'd say, that oscilloscopes, like lawyers and doctors, tend to be specialized. A so-called 'general purpose' oscilloscope is so-called because it is useful to the greatest number of users, not because it does so many things so greatly but because most users need modest performance from an instrument for the bulk of the work they do. Also, as performance went up while cost came down the meaning of 'general purpose' has expanded.

The 503 is not a general purpose 'scope although it does many general purpose tasks well. The market it was designed for was relatively low frequency, low signal level work such as found in biomedical research and product development. Also it is an excellent 'scope for an educational setting as evidenced by many of them being retired from schools where lab work has been replaced by computer simulations.

It just so happens that audio work needs a sensitive, quiet, limited bandwidth instrument for delving into low level noise and distortion problems at audio and low supersonic frequency ranges. The 450 kHz bandwith of the 503, with it's high sensitivity of 1mV per division, makes it excellent for analyzing low level signals without being crowded by AM broadcast station interference and wide bandwith white noise. Also, the 503 is a fully X-Y oscilloscope, both vertical and horizontal channels are gain and phase matched - excellent for Lissojous figure analysis of filter, loop, active device, and transdoucer behaviors.

The 503 does not have sufficient bandwidth for any but the slowest of digital circuit work so it cannot fill the roll of a general purpose scope when so much of electronics nowadays is chiefly digital control and signal processing. For digital work the minimum bandwidth would be about 20 MHz and ten times that for more serious work.

One of the best features of the 503 is there is no cooling fan. Quiet is what your ears need when working on audio.

(Now watch the prices go up of mudBay)

Arden Allen
KB6NAX

Properly trained a man can be
dog's best friend. -Corey Ford

From vilgotch at bigpond.net.au Sun May 8 21:07:02 2011
From: vilgotch at bigpond.net.au (Morris Odell)
Date: Mon, 9 May 2011 11:07:02 +1000
Subject: [BoatAnchors] Some times you get more than you pay for
In-Reply-To: <004f01cc0dbd$97d4fdc0$3c9e480c@KB6NAX>
References: <004f01cc0dbd$97d4fdc0$3c9e480c@KB6NAX>
Message-ID: <000701cc0de5$678827f0$369877d0$@net.au>

Hi Arden & the gang,

According to Stan Griffiths' book, serial numbers under 101 were used for prototypes and engineering development models so your 503 is probably a pre-production version that was subject to tweakage. That would explain the different construction in there compared to a typical Tek scope.

I enjoyed your comments on why you like the 503. My first Tek (which I still have) was a 502 - similar low bandwidth and high sensitivity but double beam. It gave me many hours of enjoyment both in restoration and use. Ideal for audio but not as fancy as the 547 which still has pride of place on my bench. I have found fans and other sources of noise to be a major source of fatigue & irritation. The massive 555 and 556 scopes are unusable for long periods for that reason as is the HP 524 counter. Some solid state equipment has noisy transformers that buzz continuously even in standby mode. I suppose it helps drown out calls to come and help in the kitchen/garden etc :-)

73

Morris VK3DOC

> -----Original Message-----
> From: boatanchors-bounces at theporch.com [mailto:boatanchors-
> bounces at theporch.com] On Behalf Of Arden Allen

> Sent: Monday, 9 May 2011 6:22 AM
> To: Old Tube Radios (new)
> Subject: [BoatAnchors] Some times you get more than you pay for
>
> I'm a Tektronix 503 oscilloscope addict. I'm incurable. It's worse
> than my
> 410B collecting that got me a garage full of them. For years I was
> able to
> hold off after having acquired six 503's, always having one on the
> bench for
> joyful use on my audio projects. But lately I broke down when I heard
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> unmentionableBay siren. There they were, like dogs at the shelter
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> for a new home before they take that trip down the hall to eternity.
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> 503
> home I was in for a shock. I had a hint when I picked up the scope
> something was different because it had belonged to a now silent key and
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> was painted grey instead of Tek's lovely sea blue/green, I wasn't
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> for the surprise I received when I popped the covers off. My first
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> owner's
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> realm of test equipment antropology like I've never been there before.
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>
> Arden Allen
> KB6NAX
>
> Adopt a shelter dog,

> save an innocent life,
> and make a friend forever =:-)
>
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors

From wb0eq at yahoo.com Mon May 9 11:03:38 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Mon, 9 May 2011 08:03:38 -0700 (PDT)
Subject: [BoatAnchors] HP 410B TVM
Message-ID: <763264.22717.qm@web45608.mail.sp1.yahoo.com>

Arden,

Thanks again for all your assistance!

One small "detail" on HP 410B VTVM.

Mine has serial number 19355; its power transformer is marked "1957". (BTW this design seems to date from 1950 and produced to 1966! That's long lived!) My paperwork (and all other copies I can find on the web) is marked:

"Serials prefixed: 024
Appendix C, Manual Backdating
Changes adapts this manual to
Serials prefixed:
024-003-44032 and below,
below 024-003-31433 and below,
Serials 21334-25833, 21433 and below,
04252 and below."

Frankly, I can't decode this! Where does my unit fit in here?

I note the HP liked to many changes to production designs without changing the model numbers. E.g. their 200CD audio genny went thru many circuit & tube changes & I found it hard to follow them.

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From navy.radio at gmail.com Mon May 9 14:42:51 2011
From: navy.radio at gmail.com (Nick England)
Date: Mon, 9 May 2011 14:42:51 -0400

Subject: [BoatAnchors] Boatanchor collection for sale - Western Canada
Message-ID: <BANLkTi=YYtVa6E6jR+DHr6FMEqB9=1OTpg@mail.gmail.com>

I know nothing about what he has
  - I'm just passing along the message (after he said it was OK).

---------- Forwarded message ----------
From: Hans Sparreboom <hsparre at telusplanet.net>
Date: Fri, Apr 29, 2011 at 6:14 PM
Subject: collection

Hi,
I have a large collection of military type radios as well as other.
Among them are two SP-600's, other Hammarlunds and Hallicrafters as
well as a R-390A. A few years ago we moved and now I'm looking at
changing to a different hobby more suitable for grand children. Would
you be interested in buying some (all?) of these "boatanchors"?
I live in Western Canada.
Looking forward to your reply.
Hans

From wb0eq at yahoo.com Mon May 9 18:25:42 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Mon, 9 May 2011 15:25:42 -0700 (PDT)
Subject: [BoatAnchors] Variac trouble
Message-ID: <30768.84979.qm@web45615.mail.sp1.yahoo.com>

My trusty 10 amp Variac of 35 years use (it was used when I started using it) has a problem.

One of the transformer wires has broken from wear, just on the track where the brush rides around on the wires of the winding.

I fixed by fishing the broken wires out, cut them & resoldered them on the side of the winding.

This has left a little bump on the track as there is a wire missing and the wire now there is of original diameter and is not worn down. Don't know what to do about that.

I'm concerned about maintenance. Any thoughts on what to put on the track to lengthen life of windings & brush? I can see where the next worn wire is liable to break. Deoxit, copper-bearing grease (anti-seize), ...?

The tension of the brush on the winding is easily adjustable, maybe leave that alone. (Brush looks like a motor brush, black stuff, carbon?) Changing the tension will cause the brush to ride on a different, as yet unused track. Perhaps that's a partial solution.

I found nothing on the web about this, strange! Exception: When changing brush, use crocus or garnet paper, i.e. exceedingly find abrasive paper, gently draw it out between brush & track to get smoother interface. Perhaps new variacs use a different arrangement; some ads mention "smooth, glass-like running surface".

(I use the variac as a source of variable AC voltage for calibrating my HP 401B's AC scales, so I'm stuck for now. And yes, this variac's got a 3-wire power cord. It's a bare variac, installed in an old large food can, what mashed potato flakes came in, perfect! And yes, I should have been capitalizing "variac".)

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From gumbear at pacbell.net Mon May 9 19:09:24 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Mon, 9 May 2011 16:09:24 -0700
Subject: [BoatAnchors] Variac trouble
References: <30768.84979.qm@web45615.mail.sp1.yahoo.com>
Message-ID: <001001cc0e9e$26a59830$799e480c@KB6NAX>

> My trusty 10 amp Variac of 35 years use (it was used when I started using it) has a problem. ....

Whatever you do to make the variac work smoothly DON'T apply any lubricant with conductive particles. Turn-to-turn current will flow causing burning of the bobbin the variac is wound on which will destabilize the wires and hasten the ruin of the variac. Just clean embedded dirt from between the turns using a mild solvent and soft cloth. There is no need to polish the wires to shiny copper, the brush residue is no more a problem than the brush itself.

Variacs, when treated kindly, will be useful for eons. They are usually ruined by excessive surge currents that pit the wires and scorch the brush. Cheap variacs made over "there" are not as durable as good 'ol American made models.

Arden Allen
KB6NAX

If you get to thinking you're a person of
some influence, try ordering somebody
else's dog around. -Will Rogers

From anchor at ec.rr.com Mon May 9 19:20:48 2011
From: anchor at ec.rr.com (Al Parker)
Date: Mon, 09 May 2011 19:20:48 -0400
Subject: [BoatAnchors] Variac trouble
In-Reply-To: <30768.84979.qm@web45615.mail.sp1.yahoo.com>
References: <30768.84979.qm@web45615.mail.sp1.yahoo.com>
Message-ID: <4DC876D0.70006@ec.rr.com>

Hi John,
For that "lump", can't you carefully file down the wire so that it is even with the rest? Yes, it will reduce the area, maybe you should pull it back out for access and then smash it down (that's a very technical procedure) to make it square. The graphite brush should be all the lubricant needed.
73,
Al, W8UT
www.boatanchors.org
www.hammarlund.info

"There is nothing -- absolutely nothing -- half so much
worth doing as simply messing about in boats"
Ratty, to Mole

On 5/9/2011 6:25 PM, John Sehring wrote:
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>
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>

From arc5 at ix.netcom.com Tue May 10 09:33:24 2011
From: arc5 at ix.netcom.com (David Stinson)
Date: Tue, 10 May 2011 08:33:24 -0500
Subject: [BoatAnchors] 1929 RCA TX
Message-ID: <FB5CAD2B7E7B4ADC8730A0CEECC19B56@DaddyPC>

I don't think anyone is going to pay 5 grand for it,
but you gotta know this is cool: 150599459055

From hankvc at lostwells.net Tue May 10 13:06:21 2011
From: hankvc at lostwells.net (HankVC)
Date: Tue, 10 May 2011 11:06:21 -0600 (MDT)
Subject: [BoatAnchors] HP 410B TVM
In-Reply-To: <763264.22717.qm@web45608.mail.sp1.yahoo.com>
Message-ID: <201105101706.p4AH6LWR009156@joanne.lostwells.net>

The esteemed John Sehring has said:
>
> Arden,
>
> Thanks again for all your assistance!
>
> One small "detail" on HP 410B VTVM.
>
> Mine has serial number 19355; its power transformer is marked "1957". (BTW this design seems to date from 1950 and produced to 1966! That's long lived!) My paperwork (and all other copies I can find on the web) is marked:

>
> "Serials prefixed: 024
> Appendix C, Manual Backdating
> Changes adapts this manual to
> Serials prefixed:
> 024-003-44032 and below,
> below 024-003-31433 and below,
> Serials 21334-25833, 21433 and below,
> 04252 and below."
>
> Frankly, I can't decode this! Where does my unit fit in here?
>

Serial number 19355 fits in the group "Serials 21334-25833, 21433 and below."

Some examination of the change data in the manual should clarify things. HP manuals are pretty good about documenting all of the configuration changes made to a product, but you've got to spend a little time looking through the manual to find data relating to your specific configuration.

Hank

From wb0eq at yahoo.com Tue May 10 13:37:47 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Tue, 10 May 2011 10:37:47 -0700 (PDT)
Subject: [BoatAnchors] Variac maintenance
Message-ID: <31821.20535.qm@web45612.mail.sp1.yahoo.com>

Thanks for all the input on maintaining Variacs.

I think the wire that broke was able to move, just a bit, as the brush rode over it.? The repeated flexing caused it to break.? Wires adjacent to it are firmly in place on the xfrm form.

After gentle cleaning of windings will get some nail polish and apply it to immobilize the windings in the area of the break & anywhere else it's needed.

Have used *extremely* gentle fine sandpaper & small file to smooth things out in vicinity of break so brush gets as smooth as possible a ride.

Also will orient the brush (it can be easily rotated) so it rides as flat as possible on the turns.

May use some Caig Labs PreservIT P100L; sugg. uses include "commutators"; will email them first.

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From wb0eq at yahoo.com Tue May 10 13:57:21 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Tue, 10 May 2011 10:57:21 -0700 (PDT)
Subject: [BoatAnchors] Fw: Re: HP 410B TVM
Message-ID: <161003.11433.qm@web45616.mail.sp1.yahoo.com>

Hank,

Nice to see a note from you on this list!? Been a long time.

I have seen some of your writings on o'scope lists.? Can you recommend a good Tektronix 'scope e-list?? I'm having problems with my Tek 212 miniature 'scope's CRT behavior.

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

Some examination of the change data in the manual should clarify things.? HP manuals are pretty good about documenting all of the configuration changes made to a product, but you've got to spend a little time looking through the manual to find data relating to your specific configuration.???

Hank

From gumbear at pacbell.net Tue May 10 15:06:35 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Tue, 10 May 2011 12:06:35 -0700
Subject: [BoatAnchors] Variac maintenance
References: <31821.20535.qm@web45612.mail.sp1.yahoo.com>
Message-ID: <004601cc0f45$a3dfe060$299f480c@KB6NAX>

> ....I think the wire that broke was able to move, just a bit, as the brush rode over it. The repeated flexing caused it to break. Wires adjacent to it are firmly in place on the xfrm form.

> After gentle cleaning of windings will get some nail polish and apply it to immobilize the windings in the area of the break & anywhere else it's needed.

> Have used *extremely* gentle fine sandpaper & small file to smooth things out in vicinity of break so brush gets as smooth as possible a ride. ....

> ....May use some Caig Labs PreservIT P100L; sugg. uses include "commutators"; will email them first.

The problem with nail polish and contact cleaners is the nail polish will be dissolved by the solvent vehicle in the contact cleaner. Fasten the wire in place with CLEAR (no black, grey or silver, etc.) epoxy. Wipe away fresh excess epoxy with printer paper dampened with acetone, toluene or laquer thinner. Allow 24 hours for complete cure before using the variac. Contact lubricant (as someone already mentioned) offers no benefit, it just tends to foul the wire-brush interface.

Arden Allen
KB6NAX

The average dog is a nicer person than
the average person. -Andy Rooney

From thompson at mindspring.com Tue May 10 16:07:06 2011
From: thompson at mindspring.com (David Thompson)
Date: Tue, 10 May 2011 16:07:06 -0400
Subject: [BoatAnchors] Squires Sanders SS-1R for Sale
References: <31821.20535.qm@web45612.mail.sp1.yahoo.com>
Message-ID: <005f01cc0f50$905b88e0$81599a04@yourxb2x7j77gn>

A ham listed a SS-1R receiver on QRZ.com for sale. He said still available but a search did not find an original post. No idea price or condition.
He never did answer my e-mail.

73 Dave K4JRB

From johnmb at nc.rr.com Tue May 10 20:24:03 2011
From: johnmb at nc.rr.com (john)
Date: Tue, 10 May 2011 20:24:03 -0400
Subject: [BoatAnchors] 1929 RCA TX
In-Reply-To: <FB5CAD2B7E7B4ADC8730A0CEECC19B56@DaddyPC>
References: <FB5CAD2B7E7B4ADC8730A0CEECC19B56@DaddyPC>
Message-ID: <6.2.1.2.2.20110510202329.03eb69f0@pop-server.nc.rr.com>

Very interesting... an extra decimal place in the price, but the provenance is interesting ...

Thanks for posting this Dave
John

At 09:33 AM 5/10/2011, David Stinson wrote:
>150599459055

From ddillman at igc.org Thu May 12 20:32:22 2011
From: ddillman at igc.org (Richard Dillman)
Date: Thu, 12 May 2011 17:32:22 -0700 (GMT-07:00)
Subject: [BoatAnchors] KSM/K6KPH Schedule for 5/14
Message-ID: <3579409.1305246742560.JavaMail.root@elwamui-polski.atl.sa.earthlink.net>

This Saturday 14 May the MRHS will be honored by a visit from two gentlemen of SAQ. As most doubtless know Grimeton Radio/SAQ in Sweden is home to the last operating Alexanderson Alternator in the world. Our Bolinas transmitter site had two alternators, now sadly gone although the building in which they (and the original Marconi rotary gap) were housed remains.

Since MRHS staff will be guiding a tour for our visitors K6KPH will be unavailable. KSM will be on the air with extended press and weather broadcasts on our Morse and RTTY frequencies but no operators will be on duty to answer calls from ships.

We plan to return to our regular schedule next Saturday.

VY 73,

RD

==================================
Richard Dillman
Chief Operator, Coast Station KSM
Maritime Radio Historical Society
http://www.radiomarine.org
==================================

From hbreuer at debitel.net Sat May 14 05:52:40 2011
From: hbreuer at debitel.net (Heinz Breuer)
Date: Sat, 14 May 2011 11:52:40 +0200
Subject: [BoatAnchors] Need info about a N570 marine transceiver made by
 Northern Radio Seattle, WA
Message-ID: <4DCE50E8.1020606@debitel.net>

Hello,
I picked up a N570 marine transceiver made by Northern Radio Seattle, WA. It is a 11 channel xtal controlled SSB/AM transceiver with two 8417

tubes in the final, probably made in the early/mid 70s. All other stages
are sand state.
I hope the finals are good, the 8417 seems to be well sought after by
the audio folks.
I would appreciate any info about this unit.

vy 73 Heinz DH2FA, KM5VT

From navy.radio at gmail.com Sun May 15 17:03:02 2011
From: navy.radio at gmail.com (Nick England)
Date: Sun, 15 May 2011 17:03:02 -0400
Subject: [BoatAnchors] Raligh NC hamfest photos
Message-ID: <BANLkTim_58cjoH5ZoxTrknK39pm_05oZ-w@mail.gmail.com>

For your viewing pleasure -
http://www.virhistory.com/ham/rars-11.htm

cheers & C U at Dayton,
Nick K4NYW

From johnmb at nc.rr.com Sun May 15 17:56:25 2011
From: johnmb at nc.rr.com (john)
Date: Sun, 15 May 2011 17:56:25 -0400
Subject: [BoatAnchors] Raligh NC hamfest photos
In-Reply-To: <BANLkTim_58cjoH5ZoxTrknK39pm_05oZ-w@mail.gmail.com>
References: <BANLkTim_58cjoH5ZoxTrknK39pm_05oZ-w@mail.gmail.com>
Message-ID: <6.2.1.2.2.20110515175551.03edb460@pop-server.nc.rr.com>

Hey, I recognize some people in there! :-)

What's that FM tuner with the RCA knobs all about?

John K5MO

From whitebear1122 at comcast.net Sun May 15 21:49:52 2011
From: whitebear1122 at comcast.net (whitebear1122 at comcast.net)
Date: Mon, 16 May 2011 01:49:52 +0000 (UTC)
Subject: [BoatAnchors] WTB Miller IF Transformers
In-Reply-To:
<826300758.203607.1305510522574.JavaMail.root@sz0139a.emeryville.ca.mail.comcast.n
et>
Message-ID:

<1405168141.203638.1305510592652.JavaMail.root@sz0139a.emeryville.ca.mail.comcast.net>

Can you please do me a favor? I'm looking for some parts to build an HBR receiver and I am having a heck of a time finding some small IF transformers. Please check your junkbox and help me if you can.

I'm looking to buy the following:

Miller 1709 or 1710 100 Khz IF transformers
Miller 1730 1800 Khz IF transformers
Miller 1711 100 Khz BFO

Maybe a junker HBR would be good too.

Thanks. 73, Scott WA9WFA

From n5cm at rtconline.com Mon May 16 06:08:05 2011
From: n5cm at rtconline.com (KEN)
Date: Mon, 16 May 2011 05:08:05 -0500
Subject: [BoatAnchors] Re TMC GSB-1 SSB ADAPTER.
Message-ID: <8595B06BE4A2407BBA69F5B202669BBF@MYCONFUSER>

Re: Raleigh NC Hamfest.

In picture #12, is the nearmost item a TMC GSB-1 Sideband adapter? Was it sold or traded? If not, I am definitely interested.

Ken   N5CM

From WA1KBQ at aol.com Mon May 16 06:23:48 2011
From: WA1KBQ at aol.com (WA1KBQ at aol.com)
Date: Mon, 16 May 2011 06:23:48 -0400 (EDT)
Subject: [BoatAnchors] Raligh NC hamfest photos
Message-ID: <1ff81.4ba264b4.3b025534@aol.com>

REL President making a rare appearance!

-Greg

In a message dated 5/15/2011 6:11:53 P.M. Eastern Daylight Time, johnmb at nc.rr.com writes:

Hey, I recognize some people in there! :-)

What's that FM tuner with the RCA knobs all about?

John K5MO

____
BoatAnchors mailing list
BoatAnchors at theporch.com
https://minime.theporch.com/mailman/listinfo/boatanchors

From wb0eq at yahoo.com Mon May 16 10:37:37 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Mon, 16 May 2011 07:37:37 -0700 (PDT)
Subject: [BoatAnchors] HP 410B VTVM
Message-ID: <827287.33862.qm@web45612.mail.sp1.yahoo.com>

Well, Arden, thanks so much for your obs on my HP 410B.

It's perking just fine now, calibrated ok even on AC ranges.

I've got a schematic of an earlier unit too, serial #5401 and above. The only changes I see are:

1. 01 uF caps from each side of AC power input line to ground; my higher-serial unit had them; I've removed them per Arden's advice. I'm surprised that tubular plastic units were used; disc ceramics is the norm as they have much less inherent inductance.

2. Low serial # (and mine too) had a 50 uf/50 V electrolytic across the meter movement too dampen the movement. I removed it; this cap needed only a few minutes of "rejuvenation" on my Sprague TO-6A cap checker. In normal operation it does not see nearly enough polarizing voltage to remain properly formed. If were to replace it, I'd use a modern, non-electrolytic cap.

2A. Oldest schematic has only a 1 uF cap for HV filtering. Subsequent cts. show 4 and finally 8 uF there, so that's what I've done using a dry cap. With only the 1 uF (of good capacitance), 35 VAC of ripple shows across this cap; with 8 uF, only about 4 VAC. My guess is that the VTVM amp cts being push-pull, the large ripple was balanced out(?). Just on general principles, I prefer a proper amount of PS filtering, consistent with not raising the PS inrush current too much (6X4 rectifier here).

The original 1 uF / 600 V cap looks like a bathtub type. They're usually filled with oil in my experience. This one, I accidentally discoverd, has a vacuum inside. I inadvertantly let my soldering iron touch to large spherical blob of soldering under each terminal & I heard a "whoosh"! The cap tested normally both before and after this event for leakage and capacitance. Hmmm.

3. On general principles, I removed all remaining mica caps & replaced with disc ceramics. The use of same-value micas & discs in this unit seems random.

4. I was able to find a pair of suitably-balanced 12AU7's, i.e. each section of tube is closely balanced. (This enables the DC balance control to work properly.) The circuit impedances are extremely high here. Even using a 11-meg-input VTVM to measure voltages upsets the circuit.

5. When zeroing the 1 VDC range, with ground clip on the DC lead, I found that touching the black plastic barrel of the probe caused visible meter deflection, a pulse of about .02 volts on the 1 VDC scale. I took the probe apart but nothing was amiss.

There's a 1-W 22 meg series resistor in the probe. I think I figured it out: the plastic probe body is acting as a capacitor dielectric and/or a very high resistance; my finger induced a charge across the 22 meg resistor which is located near the top of the probe which was then quickly dissipated thru the input circuit of the VTVM. Wrapping the probe body with electrical tape did nothing to help.

However, when I wrapped a part of the probe with plumber's teflon tape, no meter pulse when touched! Verrry interesting.

A few notes back, someone wrote about needing use teflon wire for the input circuit of this unit; I can now see why. It's a whole new high-meg world.

6. Finally...I hardly ever have any history on the BA's in my shack; if they could only tell me their story. However, this 410B can tell me something: Most of its case is painted a lavatory green---ugh. The service manual that came with it is stamped "Apollo Project". It think it was segregated equipment used by a manufacturer of Apollo project equipment, meant to be used only on that project. So, readily identifiable by color.

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From wb0eq at yahoo.com Mon May 16 11:11:46 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Mon, 16 May 2011 08:11:46 -0700 (PDT)
Subject: [BoatAnchors] Testing on TT for gassy tubes
Message-ID: <640555.26975.qm@web45608.mail.sp1.yahoo.com>

Hello All,

I found this note on testing for gassy tubes on a TT on a Collins list. See esp.

final two paragraphs. Makes eminent sense to me!

==

My 32S-1 which I just accquired seemingly worked perfectly with full power out on Lock-Key, SSB, and CW. Then, after about five minutes, the power-out would start to decrease until it was only showing about 10-watts output after ten minutes.

Having had a similar problem with another brand of radio (Tempo One)which turned out to be a leaky capacitor in the ALC circuit, I removed V-13 6AL5 and the power returned to normal even with the radio warmed up. I thought the problem to be in the ALC circuit.

But...I read through two different forums and found one owner who had a similar problem with his 32S-1 which he solved by replacing the final 6146 tubes.

So, I tested the Emission of my 6146 tubes on my Sencore TC-136 Mighty Mite Tube Tester and they tested as GOOD. Then I placed the Tester knob on the GRID LEAKAGE position and after about five to ten-minutes, the needle climbed from Good to BAD. The time it took to do this corresponded with the degraded output of the original tubes in the 32S-1.

Sencore advertised this Grid Leakage Test as unique to these testers. Now I know that to properly test tubes, they must be left in the Grid Leakage test for several minutes....just like they said!

==

So, anybody know what's so unique about the gas-testing of the above TT?

(My B-K 707 TT allows for internal adjustment of the sensitivity of its gas test.)

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From wb0eq at yahoo.com Mon May 16 13:12:13 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Mon, 16 May 2011 10:12:13 -0700 (PDT)
Subject: [BoatAnchors] Tek-written o'scope trouble-shooting manual
Message-ID: <525427.35558.qm@web45602.mail.sp1.yahoo.com>

Found a Tek-written o'scope trouble shooting manual at:

http://www.sphere.bc.ca/test/tek-parts/troubleshooting-scopes.pdf

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From thompson at mindspring.com Mon May 16 14:02:03 2011
From: thompson at mindspring.com (David Thompson)

```
Date: Mon, 16 May 2011 14:02:03 -0400
Subject: [BoatAnchors] Raligh NC hamfest photos
References: <BANLkTim_58cjoH5ZoxTrknK39pm_05oZ-w@mail.gmail.com>
Message-ID: <000b01cc13f3$63f011c0$aa589a04@yourxb2x7j77gn>
```

Nick,

Not many KW 2000's around as pictured. Then two HA-350 receivers (made by Trio). These were fairly decent all mode receivers. I also took note of the Eldico chassis that was part of what Don Merten sold as separates. Maybe a modulator. I had the 2500 V power supply he sold which I used for a couple of years until the transformer croaked.

A note on the KW-2000 series. I had a KW-2000E and the 455 kcs filter was bad. Used a filter I found on EBAY that was almost what a Rad-Com article (May 1999) said to use as a replacement. The receiver came to life with the new filter but the transceiver still did not work correctly. Problem for us on this side of the Atlantic is that KW Works did not use terminal strips but used what they called circular wiring around each tube socket. What a mess to do troubleshooting.
73 Dave K4JRB

----- Original Message -----
From: "Nick England" <navy.radio at gmail.com>
To: "Old Tube Radios (new)" <boatanchors at minime.theporch.com>
Sent: Sunday, May 15, 2011 5:03 PM
Subject: [BoatAnchors] Raligh NC hamfest photos

> For your viewing pleasure -
> http://www.virhistory.com/ham/rars-11.htm
>
> cheers & C U at Dayton,
> Nick K4NYW
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>

```
From infomet at embarqmail.com  Mon May 16 14:16:39 2011
From: infomet at embarqmail.com (Wilson Lamb)
Date: Mon, 16 May 2011 14:16:39 -0400
Subject: [BoatAnchors] Raligh NC hamfest photos
References: <BANLkTim_58cjoH5ZoxTrknK39pm_05oZ-w@mail.gmail.com>
```

<6.2.1.2.2.20110515175551.03edb460@pop-server.nc.rr.com>
Message-ID: <612DBA4C2E794DBE8AE323440CDAA37C@wilsonspc>

I'm pretty sure the REL was with Robby Delius and that he sold it. I'll ask if he has another.

I wish I had bought the Millen amp. Of course I also wish I had sold the SX-43!
73,
WL
----- Original Message -----
From: "john" <johnmb at nc.rr.com>
To: "Nick England" <navy.radio at gmail.com>; "Old Tube Radios (new)" <boatanchors at minime.theporch.com>
Sent: Sunday, May 15, 2011 5:56 PM
Subject: Re: [BoatAnchors] Raligh NC hamfest photos

>
>
> Hey, I recognize some people in there! :-)
>
> What's that FM tuner with the RCA knobs all about?
>
> John K5MO
>
>
>

From ddillman at igc.org Mon May 16 14:36:29 2011
From: ddillman at igc.org (Richard Dillman)
Date: Mon, 16 May 2011 11:36:29 -0700 (GMT-07:00)
Subject: [BoatAnchors] MRHS Lecture and Slide Show 19 May
Message-ID: <25978423.1305570989154.JavaMail.root@elwamui-huard.atl.sa.earthlink.net>

Yesterday's presentation played to a full house with great audience response. If your schedule didn't permit you to attend you have another opportunity this Thursday.

MARITIME RADIO HISTORICAL SOCIETY LECTURE AND SLIDE SHOW

Thursday 19 May, Toby's Feed Barn, Point Reyes Station, CA

6:00 to 8:00pm

MRHS Chief Operator Richard Dillman (that's me!) will be presenting a lecture and slide show regarding the history of radio in West Marin, California. The story begins with the construction of "Bolinas High Power", the Marconi trans-Pacific transmitter site in Bolinas, CA with its companion receive site at Marshall, CA. The take over by RCA and the installation of the massive Alexanderson alternators will be covered as will the arrival of marine station KPH from Daly City. Historic photos will illustrate each phase of the time line with special anecdotes to lend a personal touch.

This is a free public event held in cooperation with an art auction being held by local community radio station KWMR (90.5) where Richard is the transmitter engineer.

For information about Grimeton Radio/SAQ see:

http://www.grimeton.org/eng/besoka.html

The event will be held in a rather limited space so early arrival is recommended to assure a seat!

For more information see our Web site at http://www.radiomarine.org and the links below.

Location:

Toby's Feed Barn, 11250 Highway One, Point Reyes Station, CA 94956

For information about Toby's see:

http://www.tobysfeedbarn.com/

For directions to Toby's see:

http://tinyurl.com/3orzmza

We very much hope to see you there!

VY 73,

RD

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Richard Dillman
Chief Operator, Coast Station KSM
Maritime Radio Historical Society

http://www.radiomarine.org
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From anchor at ec.rr.com Mon May 16 16:07:18 2011
From: anchor at ec.rr.com (Al Parker)
Date: Mon, 16 May 2011 16:07:18 -0400
Subject: [BoatAnchors] Raleigh NC hamfest photos
In-Reply-To: <000b01cc13f3$63f011c0$aa589a04@yourxb2x7j77gn>
References: <BANLkTim_58cjoH5ZoxTrknK39pm_05oZ-w@mail.gmail.com>
     <000b01cc13f3$63f011c0$aa589a04@yourxb2x7j77gn>
Message-ID: <4DD183F6.5070009@ec.rr.com>

Hi Dave, Nick, et al,

The KW2000A, pic 806, was mine, you're right about the construction, I'd never seen that "circular wiring" so widely used except in homebrew.

For those that can't picture it, it's just the lead of a component that comes from a tube pin goes perpendicular to the chassis and is twisted around another lead from a similar part & solder, out in mid-air. The other end of my table was in the next pic, with John, K5MO, and Bob B (can't remember his call) in that one and the next, 808. The KW2000 just moved down a table and went home with John.

Several of us area BA guys had adjoining tables, and more across the aisle. Good 'fest, back in the big building and they almost filled it up, after 2 yrs in the much smaller one.

73,

Al, W8UT
www.boatanchors.org
www.hammarlund.info

"There is nothing -- absolutely nothing -- half so much
worth doing as simply messing about in boats"
Ratty, to Mole

On 5/16/2011 2:02 PM, David Thompson wrote:
> Nick,
>
> Not many KW 2000's around as pictured. Then two HA-350 receivers (made
> by Trio). These were fairly decent all mode receivers. I also took note
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> 73 Dave K4JRB
>
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> To: "Old Tube Radios (new)" <boatanchors at minime.theporch.com>
> Sent: Sunday, May 15, 2011 5:03 PM
> Subject: [BoatAnchors] Raligh NC hamfest photos
>
>
>> For your viewing pleasure -
>> http://www.virhistory.com/ham/rars-11.htm
>>
>> cheers & C U at Dayton,
>> Nick K4NYW

From gumbear at pacbell.net Mon May 16 18:06:59 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Mon, 16 May 2011 15:06:59 -0700
Subject: [BoatAnchors] Testing on TT for gassy tubes
References: <640555.26975.qm@web45608.mail.sp1.yahoo.com>
Message-ID: <002601cc1415$96f85e70$cd9e480c@KB6NAX>

> ....So, anybody know what's so unique about the gas-testing of the above TT?

Well John, you are confusing two different detrimental conditions tubes often develop. Grid "leakage" is a misnomer. Control grids don't leak, they get contaminated with emmissive materials from the cathode, which they are close to, and become secondary electron emitters. When warmed up the grid emits, the effect being to oppose the normal flow of electrons due to "contact bias." Contact bias is the effect of electrons being "pushed" onto the grid from the hot cathode electron "cloud." The grid takes on a negative potential from contact bias and conversely becomes positive when behaving as a secondary cathode by "giving off" electrons. As the grid becomes increasingly positive the tube conducts harder causing things to get hotter which causes more grid emmision and can ultimately result in thermal runaway towards destruction of the tube. When runaway conduction occurs a virtual resistor is formed from cathode to plate causing loss of power gain to the plate load as the input to the tube is turned into heat. Summarizing, the correct term is "grid emission." On the other hand a tube may become gassy as a result of a leaky glass envelope. That is the condition a gas test detects immediately on test. The emitting grid condition increasing reveals itself, as you noted, as the tube warms up.

Arden Allen
KB6NAX

Resist the temptations of productivity and profit that work to the detriment of nature. When you forget this principle, becoming tyrants and not custodians of the Earth, sooner or later the Earth rebels.
-Pope John Paul II addressing farmers in 2000

From ranickel at comcast.net Mon May 16 18:09:20 2011
From: ranickel at comcast.net (Robert Nickels)
Date: Mon, 16 May 2011 17:09:20 -0500
Subject: [BoatAnchors] Raleigh NC hamfest photos
In-Reply-To: <4DD183F6.5070009@ec.rr.com>
References: <BANLkTim_58cjoH5ZoxTrknK39pm_05oZ-w@mail.gmail.com>
     <000b01cc13f3$63f011c0$aa589a04@yourxb2x7j77gn>
     <4DD183F6.5070009@ec.rr.com>
Message-ID: <4DD1A090.5080108@comcast.net>

On 5/16/2011 3:07 PM, Al Parker wrote:
> it's just the lead of a component that comes from a tube pin goes
> perpendicular to the chassis and is twisted around another lead from a
> similar part & solder, out in mid-air.

I actually like that method - better at least than having to dig down to the lowest layer of parts with leads wrapped three times around each lug ;-)   I finally got my KW-2000a going, which was a bit challenging as a previous owner had converted all of the oscillators to solid-state. I'm guessing it may have had a reputation for drift to motivate such drastic action!

But the really bugger in these rigs in my experience is the tuned circuits, which consist of a number of turns of wire wound around a threaded ferrite slug, and suspended from terminals of the bandswitch. Intrepid aligners are instructed how to use acetone to loosen the goop so the core can be turned.   I guess it works, and is definitely compact and cheap.   The other common failure is the mechanical filter, but the KW group has developed pretty good methods for repairing them.   For anyone interested, a copy of a fairly late KW Electronics brochure is on BAMA:
http://bama.edebris.com/manuals/kw/kwbrochure/

The Brit S line ;-)

73, Bob W9RAN

From w9ac at arrl.net Tue May 17 20:12:44 2011
From: w9ac at arrl.net (Paul Christensen)
Date: Tue, 17 May 2011 20:12:44 -0400

Subject: [BoatAnchors] 6BM8 Audio Stage
References: <7E3BD68693834D7395104F7A5931A56F@JimsOffice>
Message-ID: <EF842859084646A7B90AAF1D45690BF0@DBTOA000>

Folks,

I'm looking for any insight you can provide into the following problem. Been working on this for four weeks now...

Picked up an old Yaesu FTdx560 (It may be JA, but boy it sure is still a BA!).   Severe 60Hz audio hum from the 6BM8 audio stage.   This tube combines a power pentode with a triode section. In this application, the triode is used as a pre-amp to the power pentode. An audio transfomrer is used on the plate of the pentode, primary in series with the plate as uisual. Secondary isolated to the speaker/headphones.

I have already replaced all full-wave filter caps as part of the overall restoration process but a fault there results in a 120 Hz hum product and not severe 60Hz buzz. The DC supply lines look clean within reason too.   I can temporarily bypass the 6BM8 grids with a high C value and buzz disappears. If I had a good FTdx560 at its side, troubleshooting would go much faster. But I don't so....

1) All voltages and resistances are correct;
2) Swapped three 6BM8 tubes. No change;
3) Ample plate and screen decoupling and bypassing. Even beefed it up to see if any positive change results. It didn't;
4) Ripple on the pentode looks acceptable and because the output transformer is in series with the plate of the pentode, ripple is of a lesser factor on the plate of the pentode;
5) Began breaking the circuit apart and clearly buzz is being introduced in the triode section, and not the pentode;
6) Audio to the grid of the triode section is absolutely clean;
7) Localizing the buzz, it's getting in either at the cathode or grid of the triode. I created a temporary plate decoupling filter circuit for the triode plate. I can filter all I want, the buzz does not show on the plate supply -- only the output of the plate to the grid of the pentode. This reafirms that the buzz is not a plate supply issue;
8) Used a scope, signal tracer and DVM to confirm all of the above;
9) Like many BA's, one side of the 6BM8 filament is grounded;
10) It's as if the 6BM8 filament is somehow being coupled to either the cathode or grid of the triode section, then passed on to the pentode with a high amplification factor. The high amplification of the pentode results in both signal and buzz amplification. Swapping 6BM8s confirms that the problem does NOT follow the tube so internal tube coupling is unlikely;
11) Although I cannot see it, perhaps external coupling is occurring at the socket between the filament and grid and/or cathode of the triode section;
12) I have completely bypassed the triode section, leaving only the pentode

and audio is quite good with just a bit of buzz into high-end headphones
which may be residual no matter what.
13) With the triode bypassed, gain is definitely less but full audio is
about 7/10 on the control legend. Not quite enough power for full audio
into a speaker;
14) The 6BM8 is extremely close to the power transformer. Later Yaesus used
a copper strap around the windings to minimize flux. One possibility is
that the transformer is failing and spraying a large amount of flux into the
nearby grid of the triode section of the 6BM8. Still, that doesn't explain
why audio is quite good when the triode is bypassed and only the pentode is
used.

Frustrated, I am close to gutting the 6BM8 to install what I've done on my Drake R4B -- namely, installation of an ultra high performance low-noise, solid-state power amp by SM0VPO. Zero noise. Zero hiss. THD under 0.01% at 1 kHz/1-watt. All this from a single-ended +12V power supply. No biploar supply required. I had several PCBs manufactured so an extra board could be used for this application.

Any sage advice as to what I could have missed? Although not detailed above, I have confirmed and substituted parts in and around the 6BM8 and analyzed what I think has been every part of the audio circuit and the supply feeding it. In short, I'm exhausted.

Many Tnx!

Paul, W9AC

From wb0eq at yahoo.com Tue May 17 21:04:53 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Tue, 17 May 2011 18:04:53 -0700 (PDT)
Subject: [BoatAnchors] Testing on TT for gassy tubes
Message-ID: <284292.18513.qm@web45616.mail.sp1.yahoo.com>

Arden,

Thanks (once more) for clarifying my thinking on an important filamentarian concept!

My B-K 707 TT, during calibration procedure, lets you select how many megs of leakage turn on the neon "leakage" bulb. Even more interestingly, it uses its meter to actually measure the leakage; once again, you can specify the scale or range of leakage via internal adjustments.

BTW, not my favorite TT as any tube that needs to be tested in the bottom half of the front panel, where many element switches need to be set, gets only emission as a performance test. This fact is alluded to in the instruction manual. Leakage & shorts are fully checked however.

Tubes whose circuits are "hard wired" (no element switch setting is necessary, just plug 'em in) on the upper half of the front panel are checked for mutual transconductance. Leakage & shorts are thoroughly cked.

I also have a Heath TT-1 TT which is inop. right now. Oh the wiring! It does do a thorough job of transconductance testing according to its paperwork.

I also have a MIL TV-7D/U by Stark (Canadian) which appears to work FB but has not been cal'd; I have the instructions for that...some day, some day.

Last but not least is a Jackson 648 which I have cal'd using my own technique. In spite of the slight hype in its instruction manual, I think it does only emission tests. However, when it tests "magic eye" tubes (I have a box full), they actually light up, cool.

(Do I have a problem with collecting too many TT's?! No, I don't think so...yet!)

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From dmcintyr at ucalgary.ca Tue May 17 23:30:13 2011
From: dmcintyr at ucalgary.ca (Deane McIntyre)
Date: Tue, 17 May 2011 21:30:13 -0600
Subject: [BoatAnchors] Re Testing on TT for gassy tubes
In-Reply-To: <640555.26975.qm@web45608.mail.sp1.yahoo.com>
References: <640555.26975.qm@web45608.mail.sp1.yahoo.com>
Message-ID: <38171A7E-606F-4F9B-9608-4F6FD0D27E6B@ucalgary.ca>

On 2011-05-16, at 9:11 AM, John Sehring wrote:

> Hello All,
>
> I found this note on testing for gassy tubes on a TT on a Collins list. See esp. final two paragraphs. Makes eminent sense to me!
>
> ==
>
> My 32S-1 which I just accquired seemingly worked perfectly with full power out on Lock-Key, SSB, and CW. Then, after about five minutes, the power-out would start to decrease until it was only showing about 10-watts output after ten minutes.
>
> Having had a similar problem with another brand of radio (Tempo One)which turned out to be a leaky capacitor in the ALC circuit, I removed V-13 6AL5 and the power

returned to normal even with the radio warmed up. I thought the problem to be in the ALC circuit.
>
> But...I read through two different forums and found one owner who had a similar problem with his 32S-1 which he solved by replacing the final 6146 tubes.
>
> So, I tested the Emission of my 6146 tubes on my Sencore TC-136 Mighty Mite Tube Tester and they tested as GOOD. Then I placed the Tester knob on the GRID LEAKAGE position and after about five to ten-minutes, the needle climbed from Good to BAD. The time it took to do this corresponded with the degraded output of the original tubes in the 32S-1.
>
> Sencore advertised this Grid Leakage Test as unique to these testers. Now I know that to properly test tubes, they must be left in the Grid Leakage test for several minutes....just like they said!
>
> ==
>
> So, anybody know what's so unique about the gas-testing of the above TT?
>
> (My B-K 707 TT allows for internal adjustment of the sensitivity of its gas test.)
>

I don't know what is unique about the grid leakage test of the Sencore tester mentioned here but
I do have a tube tester that does nothing else but test for grid emission. It is a Seco
Model GCT-8 "VT Grid Circuit Tester" that a brought for a couple of dollars many years ago
at the Calgary swap.

It has a series of 7 and 9 pin miniature tube sockets as well as a single octal socket, with
each socket being used to test several specific tubes that have the same pinout. There is a switch to
set the heater voltage and a eye tube that opens in the presence of grid emission. There is an pot
that is used to adjust the eye so that it is barely closed without a tube in place. Does anyone else
have one of these?

I have placed a photo of it on my website:

<http://deane.bio.ucalgary.ca/Seco_GCT-8_TT.jpg>

In my experience I have had a lot of problems with grid emission in the audio output tube (50L6GT,
50C5 for example) of All American Five radios - will work fine for a couple of

minutes, then the
audio gets progressively more distorted as the grid goes more positive. The Seco tester will bot
test these tubes however.

73,

Deane McIntyre VE6BPO

From spr at earthlink.net Wed May 18 00:34:37 2011
From: spr at earthlink.net (spr at earthlink.net)
Date: Tue, 17 May 2011 21:34:37 -0700 (GMT-07:00)
Subject: [BoatAnchors] Re Testing on TT for gassy tubes
Message-ID: <6931867.1305693278267.JavaMail.root@elwamui-karabash.atl.sa.earthlink.net>

Folks,

Can't speak to the Sencore tester as I don't have one. HOwever, what the HIckoks do is measur ethe plate current with the grid normally driven (Gas 1) and then add a 180 K resistor in series with the grid drive (Gas 2) and measure the plate current again. Leaving the tube to heat for 10 minutes before doing this test sounds like a good idea to me.

As has been said, both grid emission and gas will cause excessive grid current, which is what the test measures.

Regards,

Scott

-----Original Message-----
>From: Deane McIntyre <dmcintyr at ucalgary.ca>
>Sent: May 17, 2011 8:30 PM
>To: Old Tube Radios <boatanchors at theporch.com>
>Subject: [BoatAnchors] Re Testing on TT for gassy tubes
>
>
>On 2011-05-16, at 9:11 AM, John Sehring wrote:
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>>
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>set the heater voltage and a eye tube that opens in the presence of grid emission. There is an pot
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>test these tubes however.
>
>73,
>
>Deane McIntyre VE6BPO
>
>____
>BoatAnchors mailing list
>BoatAnchors at theporch.com
>https://minime.theporch.com/mailman/listinfo/boatanchors

From w9ac at arrl.net Wed May 18 08:02:37 2011
From: w9ac at arrl.net (Paul Christensen)
Date: Wed, 18 May 2011 08:02:37 -0400
Subject: [BoatAnchors] 6BM8 Audio Stage
Message-ID: <B78B8B9FF33D44599AB5BBA71E9ADC7F@DBTOA000>

First, thanks to those who replied privately, one of whom was Bob, W6JZR.
He indicated that he had seen this problem develop with a similar vintage
Yaesu transceiver. Bob's suggestion was to look at a potential ground loop
near the triode section of the 6BM8.

Like the Heathkit SB and HW series, most of the FTdx560's components are
mounted on a large, rectangular phenolic PCB. Tube sockets are soldered to
the PCB. The perimeter of the board forms a ground buss and is held against
the chassis with machine screws along the perimeter. I noticed that the
noise character of the buzz changed as I applied pressure to the phenolic
PCB. I then found that most of the PCB screws were loose. I listened as I
began my rotation of screw tightening. No change until I got to the screw
located adjacent to the 6BM8. As I tightened that screw, the buzz level
dropped down a lot but I think it's still too high.

Here's what's next: The chassis is loaded with 60Hz filament current since
one side of the filaments is bonded to the chassis.   With that in mind, I
am going to divide and isolate the ground buss for all grounded components

connected to the 6BM8. That includes the audio shield coming from the AF control, the pentode section grid leak resistor and cathode resistors with cathode bypass caps on both tube sections. That isolated buss will then be tied back to the power supply central ground point to keep it off of a high filament current chassis point. I may experiment with other grounding locations and find a point that minimizes buzz.

Secondly, I'm thinking of breaking the PCB traces to the 6BM8 filaments and get its filament return off the chassis and common ground PCB trace. Then, run twisted pair from the 6BM8 direct to the 6.3V transformer secondary. A 500-ohm hum control pot could also be added across the 6BM8 filaments, if necessary.

So, it appears that over time, the perimeter PCB ground trace had become loose from the chassis. Corrosion had built up over time causing a gradual increase in buzz. I can place star lock washers between the PCB and chassis, but in addition to that, I believe the correct solution is to get the audio ground reference away from a high 60Hz current point.

Yaesu probably could have taken lessons from the burgeoning Hi-Fi industry concerning the use of divided grounds brought back to a common point, and use of balanced filaments (return elevated above chassis). To their defense, many BAs of the era commonly tied the filaments to the chassis. I believe that's a poor and sloppy design technique. Ham literature during the late 1920s is full of useful information as AC power supplies began replacing batteries as the power source. Managing these currents was even more important then with regenerative designs. With the proliferation of the superhet, that information seems to have become lost in the following years.

An excellent source of information for the grounding of electronic circuits can be found in the Horowitz publication "The Art of Electronics." I think the best way to demonstrate the need to manage chassis currents is to look at his "right way" and "wrong way" illustrations. I used this information when modifying my Drake R-4B's audio output stage.

Again, thanks to those who responded. I think it was enough to jar my head a bit and look at the problem differently. More later after I solve this once and for all.

Paul, W9AC

From N3BJ at cox.net Wed May 18 11:36:53 2011
From: N3BJ at cox.net (Alan Fryer)
Date: Wed, 18 May 2011 11:36:53 -0400
Subject: [BoatAnchors] SP-600, SX-101A, Other Stuff at Dayton

Message-ID: <60AD0D606475428780B558160DC30742@GATEWAY>

I'll be bringing a SP-600 JX17 and a SX-101A (both in need of work), a reworked National SW-3 and other old regen and breadboard stuff to Dayton fleaspot #2923. Hope to CU there !

Alan, N3BJ

From spr at earthlink.net Wed May 18 17:14:21 2011
From: spr at earthlink.net (spr at earthlink.net)
Date: Wed, 18 May 2011 14:14:21 -0700 (GMT-07:00)
Subject: [BoatAnchors] 6BM8 Audio Stage
Message-ID: <17284600.1305753261611.JavaMail.root@elwamui-polski.atl.sa.earthlink.net>

Hi Paul,

I think that single-wire heater wiring is done for two reasons:

1) less wiring, therefore cheaper--but E. H. Scott did this, even in the Philharmonic model, which cost the same as a new Ford in 1940. I had to DC power teh first audio heater to get rid of the hum.

2) If one side of the heater is grounded to chassis everywhere, far fewer heater bypass caps are needed to keep RF from propagating down the heater wiring.

Since the observed design practices in most communications receivers make it clear that the designers didn't much care about audio quality, I expect that the above two reasons were why heaters are wired as they are. Nonetheless, if you take care to avoid the effects of ground currents, reasonably good performance can be obtained with single wire heater systems.

What I'd advise you to do is this:

1) connect the heater return for the 6BM8 to a ground a couple of inches away so as not to create a local AC voltage difference.

2) connect the audio circuit grounds, specifically including the grid leak resistor and cathode resistor/bypass cap to a single point near or on the tube socket. Return the volume control low side to that spot, too, and the cathode of the detector diode as well. The last IF transformer isolates you from other ground voltages.

I recall now that in my Stewart-Warner (or the Hallicrafters, I forget which) trans-oceanic clone, moving the return from the volume control 3 inches down a piece of wire greatly reduced the hum. That wire carried the charging current for the power supply input filter cap.

Regards,

Scott

From gumbear at pacbell.net Wed May 18 17:51:55 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Wed, 18 May 2011 14:51:55 -0700
Subject: [BoatAnchors] A note to all on helping others
References: <B78B8B9FF33D44599AB5BBA71E9ADC7F@DBTOA000>
Message-ID: <002201cc15a5$d25c6740$579d480c@KB6NAX>

Boatanchorists,

While there persists societal prejudice against those who speak freely their ideas the reticence to share knowledge is, I believe, symptomatic of the malaise of overcompetitiveness. I rue those who, if so, view the Mail List as a competitive arena. How foolish it seems to me to keep from observing members repair suggestions and solutions by private e-mailing to those seeking guidance. Kudos to Paul Christiansen and others who post the results of their work to find the remedies to those difficult problems our ancient anchors confound us with. How 'bout less privacy and more publicity with those ideas, fellas!

Arden

Fear always springs from ignorance.
-Ralph Waldo Emerson

From gumbear at pacbell.net Wed May 18 18:22:20 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Wed, 18 May 2011 15:22:20 -0700
Subject: [BoatAnchors] 6BM8 Audio Stage
References: <17284600.1305753261611.JavaMail.root@elwamui-polski.atl.sa.earthlink.net>
Message-ID: <002b01cc15aa$12e36da0$579d480c@KB6NAX>

> ....Since the observed design practices in most communications receivers make it clear that the designers didn't much care about audio quality, ...

Nor, Scott, did they necessarily understand how ground circuit deterioration would evenuate nasty and difficult to find ground loop problems. Ground loops are often the bane of electronics engineers who throw up their hands when confronted with chassis wiring and circuit board layout designers who haven't a clue as to what a ground loop is. "That's what engineering change orders are for so leave it to the manufacturing engineers to deal with that," you can almost hear them muttering to themselves. I've found ground loop noise problems due to mistakes in design in all sorts of audio and receiving equipment over the years, value engineering well enough to blame for many. It seems it's guaranteed ground loop problems will arise the day after support ends for those products :-0

I once was challenged to repair a Marrantz FM receiver which was described as having four letter word problems. A bit of flexing of the chassis instantly pointed the way. Numerous circuit board grounding points had become semi-isolated from the metal chassis causing the IF strip to go nuts. A few drops of contact cleaner-lubricant on all the grounding hardware and then reworking them to snugness made thing work like new again!

Arden Allen
KB6NAX
735 6th St.
Vallejo, CA 94590
(707) 553-2361
gumbear at pacbell.net

If you get to thinking you're a person of
some influence, try ordering somebody
else's dog around. -Will Rogers

From bill at iaxs.net Thu May 19 00:24:16 2011
From: bill at iaxs.net (Bill Hawkins)
Date: Wed, 18 May 2011 23:24:16 -0500
Subject: [BoatAnchors] A note to all on helping others
In-Reply-To: <002201cc15a5$d25c6740$579d480c@KB6NAX>
References: <B78B8B9FF33D44599AB5BBA71E9ADC7F@DBTOA000>
     <002201cc15a5$d25c6740$579d480c@KB6NAX>
Message-ID: <964EDC7931E24E19A0059F21B2AC5959@cyrus>

Arden,

I value your contributions to this list, to the point of selecting your name first when a group of messages comes in. But I don't agree that competition drives private replies. There are those of us who are not sure that our reply
will be helpful, or that it will be correct. This has never bothered me (:-) but no two people are alike, due to the complexity of the brain.

>From what I've read, most of our fears are genetic, and not necessarily from perceived ignorance. There are a bunch of people with a preference for tea parties that wouldn't know ignorance if it sat on them. They've got tremendous

self esteem but nothing to base it on. OTOH, ignorance can be cured by knowledge,
but stupidity is forever, and possibly as common as hydrogen in the Universe.
I say "possibly" because we don't have a big enough sample. Ask Harlan Ellison.

The time-nuts list by John Ackerman (for those who value the pursuit of more powers of ten in the determination of precision time more than life itself) directs either Reply or Reply All to the list. You have to work at creating a private reply.

That said, I've enjoyed Jack's list on Phil Porch's server for about 20 years
now. The traffic today is a shadow of what it once was. Perhaps we could stand
the bandwidth of Reply All now that we're not using 2400 baud modems to receive
our messages.

Should you wish to reply to the non-BA content of this post (most of it) please write to bill at iaxs.net. There are no obfuscations of my email address because I'm already on all of the spam lists, and Red Condor eliminates them.

In memory of Nolan, who used to append keywords designed to attract the NSA to his message: 807, 6146, R-389, R-390, R-391, R-392, HRO, Collins, Hammurlund,
Armstrong, Tektronix, HP, Fluke, and the list goes on.

Best regards to a great group,
Bill Hawkins

-----Original Message-----
From: Arden Allen
Sent: Wednesday, May 18, 2011 4:52 PM

Boatanchorists,

While there persists societal prejudice against those who speak freely their ideas the reticence to share knowledge is, I believe, symptomatic of the malaise of overcompetitiveness. I rue those who, if so, view the Mail List as a competitive arena. How foolish it seems to me to keep from observing members repair suggestions and solutions by private e-mailing to those seeking guidance. Kudos to Paul Christiansen and others who post the results of their work to find the remedies to those difficult problems our ancient anchors confound us with. How 'bout less privacy and more publicity with those ideas, fellas!

Arden

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-Ralph Waldo Emerson

From gumbear at pacbell.net Thu May 19 02:33:18 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Wed, 18 May 2011 23:33:18 -0700
Subject: [BoatAnchors] 6BM8 Audio Stage
References: <12722472.1305760631890.JavaMail.root@elwamui-polski.atl.sa.earthlink.net>
Message-ID: <001a01cc15f3$1b83cb00$b99d480c@KB6NAX>

Hi Scott,

Yes, that will get you a reliable radio long term - except for aluminum chassis stuff. To find faulty grounds I take a solder aid or sharp scribe and poke the metal on the edge of the ground lug to force a better connection. If things change that lug needs reworking or soldering down as you suggest.

Arden

> Hi Arden,

> One of the things to do with a radio with mysterious problems is to ground-bond all the riveted chassis ground points--ground lugs on terminal trips and tube socket mounting frames, for instance--by cleaning the metal parts and soldering the metal lugs to the chassis, using rosin soldering flux and a large soldering gun or 150w+ soldering iron. This is generally easy to do and doesn't strain the brain, and may fix your weird problems. This will eliminate the possibility of oxidized ground points.

> Regards,

> Scott

From spr at earthlink.net Thu May 19 16:21:47 2011
From: spr at earthlink.net (spr at earthlink.net)
Date: Thu, 19 May 2011 13:21:47 -0700 (GMT-07:00)

Subject: [BoatAnchors] 6BM8 Audio Stage
Message-ID: <18449453.1305836508187.JavaMail.root@elwamui-lapwing.atl.sa.earthlink.net>

Hi Arden,

I recommend soldering *all* the ground lug-to-chassis connections. It saves wear and tear on the brain and just plain removes this as a present or future source of trouble.

I need all my brain cycles for the really difficult problems and would rather concentrate them there.

Regards,

Scott

-----Original Message-----
>From: Arden Allen <gumbear at pacbell.net>
>Sent: May 18, 2011 11:33 PM
>To: "Old Tube Radios (new)" <boatanchors at minime.theporch.com>, spr at earthlink.net
>Subject: Re: [BoatAnchors] 6BM8 Audio Stage
>
>Hi Scott,
>
>Yes, that will get you a reliable radio long term - except for aluminum
>chassis stuff. To find faulty grounds I take a solder aid or sharp scribe
>and poke the metal on the edge of the ground lug to force a better
>connection. If things change that lug needs reworking or soldering down as
>you suggest.
>
>Arden
>
>
>> Hi Arden,
>
>> One of the things to do with a radio with mysterious problems is to
>ground-bond all the riveted chassis ground points--ground lugs on terminal
>trips and tube socket mounting frames, for instance--by cleaning the metal
>parts and soldering the metal lugs to the chassis, using rosin soldering
>flux and a large soldering gun or 150w+ soldering iron. This is generally
>easy to do and doesn't strain the brain, and may fix your weird problems.
>This will eliminate the possibility of oxidized ground points.
>
>> Regards,
>

>> Scott
>

From arc5 at ix.netcom.com Thu May 19 16:46:42 2011
From: arc5 at ix.netcom.com (David Stinson)
Date: Thu, 19 May 2011 15:46:42 -0500
Subject: [BoatAnchors] 6BM8 Audio Stage
In-Reply-To: <18449453.1305836508187.JavaMail.root@elwamui-lapwing.atl.sa.earthlink.net>
References: <18449453.1305836508187.JavaMail.root@elwamui-lapwing.atl.sa.earthlink.net>
Message-ID: <538E41312E2D4A298FABDEC0B199904A@DaddyPC>

Let me endorse checking and correcting grounding.
When working on a mil rig, the first thing to do with a meter
is to check all the so-called "grounds." Learned that "the hard way."
Many times I've found whole assemblies with several hundred ohms-
sometimes more- between them and others to which they should
be "grounded." Usually a turn of a mounting screw will do the job,
but soldering rivits is a good idea too.

From franklin6209 at att.net Thu May 19 20:50:44 2011
From: franklin6209 at att.net (Gary Franklin)
Date: Thu, 19 May 2011 20:50:44 -0400
Subject: [BoatAnchors] Collins S-Line Transmitters
Message-ID: <7F28E56085CA4F6EBCB3BE4CA0D51EF6@RADIO1>

What's the common cause for relay hang-up in Collins S-Line transmitters? I have a
32S-3 which has an intermitant issue with relay hang-up from time to time.

Also what is the a fix for drifting zero set on 75S-3 receivers s-meter. It
dosen't take long after I have zeroed the s-meter before it is way off again.

Thanks
Gary K8BKB

From wb0eq at yahoo.com Fri May 20 12:01:36 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Fri, 20 May 2011 09:01:36 -0700 (PDT)
Subject: [BoatAnchors] Internal NiCad's
Message-ID: <185639.77754.qm@web45606.mail.sp1.yahoo.com>

Slightly off topic here...I've just realized I've got some old ss test gear that uses internal batteries to function. I've had 'em for some years, never thought to ck them until now.

E.g. Hewlett Packard 403B AC Voltmeter, I have two of them.? Vy senstive tahey are, down to 1 mV AC FS.

Often times, making such low level AC is plagued by hum & ground loops.? So H-P designed the 403B to actually run on internal batteries.? They are charged any time the unit is turned on & connected to an AC power line.

For "touchy" measurements, you simply disconnect the unit from AC power.? Voila, you're on internal DC power.? Nice idea.

However, after many years, it was time to ck the nicads!? Leaks could cause a disaster.

I have two of them.? Oldest had original nicads from 1977!? That's 34 years old.? These cells (20(!) of them in a 24 VDC @ 225 mA-H pack) still held charge fine & powered unit ok but were starting to leak but hadn't done any damage.? Other newer unit didn't have a date code on batteries but had to be 25 years old, also just starting to leak.

Now the 20 cells are of the small button type, all shrink wrapped into a small package.? Where in the dickens do I get replacements & cheaply?

Aha, found the solution.? Cordless phone battery packs.? ?

Two ways to go:

1.? I've collected these NiCad & NiMH battery packs from defunct cordless phones from our local recycling center.? Cost = zero.? I chose all Nicads, 600 mA-Hr each.? I sorted, charged, tested all the cells.? Any signs of chemical leakage, out they went.? Found some "shorted", used zapping, 2000 uF cap @ 30 VDC to zap them; in most cases it fixed the short & cell took charge normally.??Identified bad unfixable cells & removed them from the 3-packs. Then, sorted all cells during charge using a true constant-current charger.? This homebrew charger gives me up to 120 VDC so I could string all the cells together; I measured voltages @ 60 mA charge current and grouped them by this voltage.?I assumed the ones with the _lower_ charge voltage across them (when at full charge) to be the better ones, having lower ESZ, so needing _less_ voltage. As this measurement includes effects of cell internal impedance (ESZ) I think it's a better gauge than the after-charge, open-voltage measurements.? Any comments on this?

Tape & solder 'em together and there's my battery 24 VDC pack.

2.? Alltronics has 3.6 V 300 mA-Hr nicad three 2/3-AA-size cordless phone packs for $3 each, that's $1 per cell!? So a bundle of 20 (to give 24 V) would cost only $20.? (So, is my cell-selection time worth $1 a pop?!) If the above doesn't technique work out, I'll choose this route.

Other equipment at battery leakage risk includes VOM's and older VTVMs which use batteries for ohms function.? Also my newly-acquired Tektronix 212 miniature portable o'scope has 'em, needs to be cked.

--John Sehring? WB0EQ/VE6? Okotoks, Alberta, Canada

From WA5CAB at cs.com Fri May 20 12:15:36 2011
From: WA5CAB at cs.com (WA5CAB at cs.com)
Date: Fri, 20 May 2011 12:15:36 EDT
Subject: [BoatAnchors] Internal NiCad's
Message-ID: <43cae.447fa5d3.3b07eda8@cs.com>

I would comment that the lower voltage on charge could also be due to lower state of charge. For example, take two new cells of whatever mAHr rating (but both cells of the same type, manufacturer, age and ratings). Discharge one to say 80% (theoretical) and the other to 40% of rated capacity. Put on charge in series and you should see the one at 40% with lower voltage initially than the other.

In a message dated 5/20/2011 11:01:57 AM Central Daylight Time,
wb0eq at yahoo.com writes:
> I assumed the ones with the _lower_ charge voltage across them (when at
> full charge) to be the better ones, having lower ESZ, so needing _less_
> voltage. As this measurement includes effects of cell internal impedance (ESZ)
> I think it's a better gauge than the
> after-charge, open-voltage measurements. Any comments on this

Robert & Susan Downs - Houston
wa5cab dot com (Web Store)
MVPA 9480

From spr at earthlink.net Fri May 20 12:56:37 2011
From: spr at earthlink.net (Scott Robinson)
Date: Fri, 20 May 2011 09:56:37 -0700
Subject: [BoatAnchors] Internal NiCad's
In-Reply-To: <185639.77754.qm@web45606.mail.sp1.yahoo.com>
References: <185639.77754.qm@web45606.mail.sp1.yahoo.com>
Message-ID: <4DD69D45.809@earthlink.net>

Folks,

I suggest this source for nearly any kind of rechargeable cells:

<http://www.batteryspace.com/>

One caveat: older electronics like these examples probalby use a constant trickle charge for the batteries. I think NiCds do better with this charging regime than NiMh, although the latter have a larger capacity and are available in a wider variety of sizes.

In situations where battery operation is not needed, sometimes you can just replace the battery with a capacitor and shunt regulator. I did this for my GenRad 1564 1/3-octave analyzer.

Regards.

Scott

On 5/20/11 9:01 AM, John Sehring wrote:

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> E.g. Hewlett Packard 403B AC Voltmeter, I have two of them. Vy senstive tahey are, down to 1 mV AC FS.
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> Often times, making such low level AC is plagued by hum& ground loops. So H-P designed the 403B to actually run on internal batteries. They are charged any time the unit is turned on& connected to an AC power line.
>
> For "touchy" measurements, you simply disconnect the unit from AC power. Voila, you're on internal DC power. Nice idea.
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> However, after many years, it was time to ck the nicads! Leaks could cause a disaster.
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> I have two of them. Oldest had original nicads from 1977! That's 34 years old. These cells (20(!) of them in a 24 VDC @ 225 mA-H pack) still held charge fine& powered unit ok but were starting to leak but hadn't done any damage. Other newer unit didn't have a date code on batteries but had to be 25 years old, also just starting to leak.
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> Aha, found the solution. Cordless phone battery packs.
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>   after-charge, open-voltage measurements. Any comments on this?
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> Other equipment at battery leakage risk includes VOM's and older VTVMs which use batteries for ohms function. Also my newly-acquired Tektronix 212 miniature portable o'scope has 'em, needs to be cked.
>
> --John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada
>
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>

From wb0eq at yahoo.com Fri May 20 13:25:27 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Fri, 20 May 2011 10:25:27 -0700 (PDT)
Subject: [BoatAnchors] Internal NiCad's
In-Reply-To: <4DD69D45.809@earthlink.net>
Message-ID: <99633.59361.qm@web45614.mail.sp1.yahoo.com>

Thanks vy much for source of batteries, looks really good, best prices I've seen.

Like ur idea about large capacitor & shunt regulator instead of battery. What size cap did you use? What kind of regulator was it, constant voltage or constant current? And what exactly does "shunt" reg. mean in this context?

Seems that NiCad & NiMH batteries can be pretty much charged the same way, e.g. a constant current of C/10 @ 12-14 hours will do nicely & won't overcharge them if not held too long beyond that time.

Thanks, Scott.

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

--- On Fri, 5/20/11, Scott Robinson <spr at earthlink.net> wrote:

> From: Scott Robinson <spr at earthlink.net>
> Subject: Re: [BoatAnchors] Internal NiCad's
> To: "John Sehring" <wb0eq at yahoo.com>
> Cc: boatanchors at theporch.com
> Received: Friday, May 20, 2011, 10:56 AM
> Folks,
>
> I suggest this source for nearly any kind of rechargeable
> cells:
>
> <http://www.batteryspace.com/>
>
> One caveat: older electronics like these examples probalby
> use a
> constant trickle charge for the batteries. I think NiCds do
> better with
> this charging regime than NiMh, although the latter have a
> larger
> capacity and are available in a wider variety of sizes.
>
> In situations where battery operation is not needed,
> sometimes you can
> just replace the battery with a capacitor and shunt
> regulator. I did
> this for my GenRad 1564 1/3-octave analyzer.
>
> Regards.
>
> Scott
>

From wb0eq at yahoo.com Fri May 20 13:55:41 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Fri, 20 May 2011 10:55:41 -0700 (PDT)
Subject: [BoatAnchors] Bad grounds
Message-ID: <355306.52268.qm@web45603.mail.sp1.yahoo.com>

One of the first things I do with new-to-me equipment is to tighten all hardware
carefully. This of course includes a lot of ground connections. I make sure star

washers & such are in place, too.   I find an awful lot of partially loosened stuff.

I am stumped by aluminum chassis with rivets. Hewlett-Packard loves to use them. Lots of terminal strips & tube sockets on Al. What's a body to do with that? Drill out & replace rivet with screw, washer(s) & bolts? Messy, prone to peripheral damage. Tap rivets with a punch over an anvil horn to tighten 'em up? Ouch.

I once had an HP 400 vy sensitive AC voltmeter, tube type, riveted mechanical connections, Al chassis. I could never get all the noise out of it, mostly from mechanical (ground) problems I think.

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From spr at earthlink.net Fri May 20 14:00:54 2011
From: spr at earthlink.net (Scott Robinson)
Date: Fri, 20 May 2011 11:00:54 -0700
Subject: [BoatAnchors] Internal NiCad's
In-Reply-To: <99633.59361.qm@web45614.mail.sp1.yahoo.com>
References: <99633.59361.qm@web45614.mail.sp1.yahoo.com>
Message-ID: <4DD6AC56.70104@earthlink.net>

Hi John,

I don't remember the cap size, but 4700 uF ought to work.

A shunt regulator is essentially a zener diode from B+ to ground; it conducts enough current to limit the voltage across it. A zener to the base of a power transistor works very well...as long as it's in a circuit whose peak current won't toast anything. The transistor needs to be thermally attached to the aluinum chassis. The charging circuits are generally pretty high impedance circuits.

Regards,

Scott

On 5/20/11 10:25 AM, John Sehring wrote:
> Thanks vy much for source of batteries, looks really good, best prices I've seen.
>
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a constant current of C/10 @ 12-14 hours will do nicely& won't overcharge them if not held too long beyond that time.
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>
> --John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada
>
>
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>
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>> Subject: Re: [BoatAnchors] Internal NiCad's
>> To: "John Sehring"<wb0eq at yahoo.com>
>> Cc: boatanchors at theporch.com
>> Received: Friday, May 20, 2011, 10:56 AM
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From spr at earthlink.net Fri May 20 14:28:14 2011
From: spr at earthlink.net (Scott Robinson)
Date: Fri, 20 May 2011 11:28:14 -0700
Subject: [BoatAnchors] Bad grounds
In-Reply-To: <355306.52268.qm@web45603.mail.sp1.yahoo.com>

References: <355306.52268.qm@web45603.mail.sp1.yahoo.com>
Message-ID: <4DD6B2BE.2030807@earthlink.net>

Hi John,

Well, now, aluminum chassis with rivets is a problem.

You could get some #18 bus bar and tie all the grounds together, running the bus bar next to the chassis so that for RF it pretty much is the chassis.

There are fluxes that will permit solder to adhere to aluminum, but I wouldn't use them anywhere I couldn't wash thoroughly afterwards (not where the flux could creep under a rivet head, for example). They tend to contain fluoride and other very active stuff. You could tin a spot in an open area and solder the bus bar to that.

Regards,

Scott

On 5/20/11 10:55 AM, John Sehring wrote:
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> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>

From knjhanlon at msn.com Fri May 20 16:11:45 2011
From: knjhanlon at msn.com (JAMES HANLON)
Date: Fri, 20 May 2011 14:11:45 -0600

Subject: [BoatAnchors] Collins S-Line Transmitters
In-Reply-To: <7F28E56085CA4F6EBCB3BE4CA0D51EF6@RADIO1>
References: <7F28E56085CA4F6EBCB3BE4CA0D51EF6@RADIO1>
Message-ID: <SNT106-DS21496469A096C41937283CA0710@phx.gbl>

Gary,

I don't know anything about the 32S3, sadly, but I do know a thing or three about relays. Does the voltage across the relay coil drop to zero when the relay is "hung up?" If the coil voltage does not drop to zero, it is possible that there is still enough current flowing in the relay coil to keep it closed. You have to drop the coil current to below the "release" value for the relay to open. On the other hand, if the voltage does drop to zero and the relay does not release, then something is causing it to "stick." Most often that is a sticky contact, either mechanically stuck together because the contact has become roughened by repeated switching arcs or because an arc has welded the contact together. There might also be some debris somewhere in the relay mechanism that is causing it to hang up. If you have this later kind of hang up problem I'd suggest that you do a careful visual inspection of the relay contacts and the relay armature mechanism to see if you can't find the problem and clean it out. Be very cautious if you decide to "burnish" the contacts. It doesn't take much to remove the precious metal from the contact surface and really mess it up.

Good luck,

Jim, W8KGI
  ----- Original Message -----
  From: Gary Franklin<mailto:franklin6209 at att.net>
  To: Boatanchors<mailto:boatanchors at theporch.com>
  Sent: Thursday, May 19, 2011 6:50 PM
  Subject: [BoatAnchors] Collins S-Line Transmitters

  What's the common cause for relay hang-up in Collins S-Line transmitters? I have a 32S-3 which has an intermitant issue with relay hang-up from time to time.

  Also what is the a fix for drifting zero set on 75S-3 receivers s-meter. It dosen't take long after I have zeroed the s-meter before it is way off again.

  Thanks
  Gary K8BKB

From smithab11 at comcast.net Fri May 20 16:44:14 2011
From: smithab11 at comcast.net (B Smith)
Date: Fri, 20 May 2011 16:44:14 -0400
Subject: [BoatAnchors] Collins S-Line Transmitters

In-Reply-To: <SNT106-DS21496469A096C41937283CA0710@phx.gbl>
References: <7F28E56085CA4F6EBCB3BE4CA0D51EF6@RADIO1>
     <SNT106-DS21496469A096C41937283CA0710@phx.gbl>
Message-ID: <295086CBE3254B56A33C2F31AA6A10C8@Dell560>

I often used a strip of smooth cardboard soaked
with contact cleaner to clean relays.
However burnishing tools may be found at:
http://unicornelex.com/burnishingtools.aspx

73

breck
k4chehttp://unicornelex.com/burnishingtools.aspx

From: "JAMES HANLON" <knjhanlon at msn.com>
Sent: Friday, May 20, 2011 4:11 PM
To: "Boatanchors" <boatanchors at theporch.com>;
"Gary Franklin" <franklin6209 at att.net>
Subject: Re: [BoatAnchors] Collins S-Line
Transmitters

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>  ----- Original Message -----
>  From: Gary
> Franklin<mailto:franklin6209 at att.net>
>  To:
> Boatanchors<mailto:boatanchors at theporch.com>
>  Sent: Thursday, May 19, 2011 6:50 PM
>  Subject: [BoatAnchors] Collins S-Line
> Transmitters
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>  Thanks
>  Gary  K8BKB
> _______________________________________________
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>


From k4oah at mindspring.com  Fri May 20 16:59:20 2011
From: k4oah at mindspring.com (Garey Barrell)
Date: Fri, 20 May 2011 16:59:20 -0400
Subject: [BoatAnchors] Collins S-Line Transmitters
In-Reply-To: <7F28E56085CA4F6EBCB3BE4CA0D51EF6@RADIO1>
References: <7F28E56085CA4F6EBCB3BE4CA0D51EF6@RADIO1>
Message-ID: <4DD6D628.6060205@mindspring.com>

Gary -
```

Does the relay hang up in PTT? Or in VOX? Or both? There are two 68k, 2W resistors wired in parallel in some versions that can affect relay operation. These tend to go up in value with age. I think were replaced with a 34k, 7W wirewound. There are some other possible problems, but this comes to mind as a start.

Drifiting S-Meters are usually due to grid emission (gassy) tubes at V2, V6 and/or V7.

73, Garey - K4OAH
Glen Allen, VA

Drake 2-B, 2-C/2-NT, 4-A, 4-B, C-Line
and TR-4/C Service Supplement CDs
<www.k4oah.com>

Gary Franklin wrote:

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From k4oah at mindspring.com Fri May 20 17:02:30 2011
From: k4oah at mindspring.com (Garey Barrell)
Date: Fri, 20 May 2011 17:02:30 -0400
Subject: [BoatAnchors] Collins S-Line Transmitters
In-Reply-To: <7F28E56085CA4F6EBCB3BE4CA0D51EF6@RADIO1>
References: <7F28E56085CA4F6EBCB3BE4CA0D51EF6@RADIO1>
Message-ID: <4DD6D6E6.2070107@mindspring.com>

Gary -

C119 can also cause VOX hanging if leaky.

73, Garey - K4OAH
Glen Allen, VA

Drake 2-B, 2-C/2-NT, 4-A, 4-B, C-Line
and TR-4/C Service Supplement CDs

<www.k4oah.com>

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> What's the common cause for relay hang-up in Collins S-Line transmitters? I have a 32S-3 which has an intermitant issue with relay hang-up from time to time.
>
> Also what is the a fix for drifting zero set on 75S-3 receivers s-meter. It dosen't take long after I have zeroed the s-meter before it is way off again.
>
>
> Thanks
> Gary K8BKB
>
>

From gumbear at pacbell.net Fri May 20 22:47:43 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Fri, 20 May 2011 19:47:43 -0700
Subject: [BoatAnchors] Bad grounds
References: <355306.52268.qm@web45603.mail.sp1.yahoo.com>
Message-ID: <004301cc1761$9a2c1ab0$5b9d480c@KB6NAX>

> ....I am stumped by aluminum chassis with rivets. Hewlett-Packard loves to use them. Lots of terminal strips & tube sockets on Al. What's a body to do with that? Drill out & replace rivet with screw, washer(s) & bolts? Messy, prone to peripheral damage. Tap rivets with a punch over an anvil horn to tighten 'em up? Ouch.

There are a couple of workarounds that will avoid the "ouch" factor with riveted aluminum chassis grounds. If a defective ground point cannot be determined to be a source of a problem then solder several ground points together temporarily so that the paralleling of the several grounds reduces ground resistance by the factor of how many grounds are bussed together (not considering the copper wire resistance which is at least an order of magnitude lower in resistance contribution). As you are dealing with milliohms of resistance this method obviates the need for a milliohmeter. If you want to know the actual joint resistance configure a power supply to run in constant current mode or use a series resistor to establish a 100 mA or 1 amp current source, say 120 or 12ohms, respectively, connected to a 12 volt power supply. Connect your sensitive DC voltmeter to opposite sides of the ground junction and pass your test current through. Ohm's Law will tell you the resistance. If you have a DVM with four terminal (Kelvin) connections all you need is another set of test leads; set the meter for Kelvin measurements. The repair is to permanently buss a bunch of grounds together in low frequency circuits. Or you can peen the rivets to repair some grounds. Some rivets will need to be drilled out and replaced with nut and bolt.

Arden Allen
KB6NAX

Adopt a shelter dog,
save an innocent life,
and make a friend forever =:-)

From shriver1 at comcast.net Sat May 21 09:47:25 2011
From: shriver1 at comcast.net (Shriver)
Date: Sat, 21 May 2011 09:47:25 -0400
Subject: [BoatAnchors] Internal NiCad's
In-Reply-To: <185639.77754.qm@web45606.mail.sp1.yahoo.com>
References: <185639.77754.qm@web45606.mail.sp1.yahoo.com>
Message-ID: <4DD7C26D.7080904@comcast.net>

I've got two HP 403B's, I have one that's my "working" unit. Those button-call NiCd batteries became obsolete while the unit was still under support. HP shifted over to using four sticks of five 1/3-AA NiCd cells. They are oriented fore-and-aft, and stacked in two rows. (This replaces the four horizontal rows of five button cells.) There are new plastic battery clamps that hold the batteries in this position, using the original holes, but rotated (like the batteries) 90 degrees.

The unit I use already had that conversion. So I bought the four sticks of 1/3-AA cells online, and put them in to replace the existing ones. They (of course) have solder tabs at the ends.

Unfortunately, I'm sure if you called up Agilent looking for those battery holders, they would laugh at you. At least they have the honor to have the manual online:

http://cp.literature.agilent.com/litweb/pdf/00403-90013.pdf

Ugh, but it's ugly -- probably scanned from filthy microfiche or microfilm.

-- John Shriver

From hankvc at lostwells.net Sat May 21 14:28:36 2011
From: hankvc at lostwells.net (HankVC)
Date: Sat, 21 May 2011 12:28:36 -0600 (MDT)
Subject: [BoatAnchors] Old FM broadcast transmitters available in SF Bay Area
Message-ID: <201105211828.p4LISas4002089@joanne.lostwells.net>

I saw this in the ba.broadcast newsgroup, and thought I'd let it be known to the boatanchors community that some heavy iron is available for a "come get them" price. These are in the San Francisco area.

>From the posting:
"Some time back, I mentioned the upcoming availability of two old transmitters. Well, they need to go NOW. One is a Collins 831D (2.5KW); the other is a newer Rockwell/Continental 831D. Both are sans exciter.

Cost: you have to take it (or them) away. The Collins is tuned to 92.1; the Continental is tuned to 101.7. There are one or two spare finals (5CX1500B) in boxes. 240V, single phase. Both run, or at least did last time we tried them.

FOB Smith Ranch, Lafayette (Collins) and Livermore hills (Continental)."

Contact is John Higdon, <higgy at kome.com>
+1 408 ANdrews 6-4400
AT&T-Free At Last

While I can't think of a ham band use for these offhand, I figure that if somebody can use the iron, better recycle it than send it to a scrapper.

Hank

From jerry7proc at yahoo.com Sat May 21 17:02:24 2011
From: jerry7proc at yahoo.com (Jerry Proc)
Date: Sat, 21 May 2011 14:02:24 -0700 (PDT)
Subject: [BoatAnchors] What Is It?
Message-ID: <436979.49348.qm@web112302.mail.gq1.yahoo.com>

Hello Everyone,

I have just finished adding to what I believe to be, the oldest artifact in my Canadian Marconi virtual museum. Its a Telegraph Transmitter. Does anyone know exactly what it might have been used for? Especially curious, is the coiled strip of copper band atop the front panel. Seems the Marconi company was real stingy with the nameplate data. The title "Telegraph" Transmiiter is what came from the E-bay seller, hence I am also trying to get a confirmation of the name. Are there any similar devices made by other manufacturers?

http://www.jproc.ca/marconi/tt.html

--
Regards,
Jerry Proc
E-mail: jerry7proc at yahoo.com

From esieb at sympatico.ca Sat May 21 17:32:53 2011
From: esieb at sympatico.ca (Ed Sieb)
Date: Sat, 21 May 2011 17:32:53 -0400
Subject: [BoatAnchors] What Is It?
In-Reply-To: <436979.49348.qm@web112302.mail.gq1.yahoo.com>
Message-ID: <BLU0-SMTP424E0B396757C8881466C6C9700@phx.gbl>

I'm going to guess. It looks (to me) like a portable spark transmitter. The markings on
the bakelite strip might be a rudimentary frequency adjustment for 100 to 250 Meters.   I
see what appears to be a large spark coil on the right side of the box.

Ed, VA3ES

Jerry Proc wrote:
I have just finished adding to what I believe to be, the oldest artifact in my Canadian
Marconi virtual museum. Its a Telegraph Transmitter. Does anyone know exactly what it
might have been used for? Especially curious, is the coiled strip of copper band atop the
front panel. Seems the Marconi company was real stingy with the nameplate data. The title
"Telegraph" Transmiiter is what came from the E-bay seller, hence I am also trying to get
a confirmation of the name. Are there any similar devices made by other manufacturers?

From W0EOM at aol.com Sat May 21 20:00:37 2011
From: W0EOM at aol.com (W0EOM at aol.com)
Date: Sat, 21 May 2011 20:00:37 EDT
Subject: [BoatAnchors] What Is It?
Message-ID: <5d3fa.f986e3d.3b09ac25@aol.com>

Jerry - the coil on top was for tuning the spark xmtr (buzzer coil)
inside the box. very similar to the SCR-65 used in WW 1.

Will

In a message dated 5/21/2011 2:02:55 P.M. Pacific Daylight Time,
jerry7proc at yahoo.com writes:

Hello Everyone,

I have just finished adding to what I believe to be, the oldest artifact in my Canadian Marconi virtual museum. Its a Telegraph Transmitter. Does anyone know exactly what it might have been used for? Especially curious, is the coiled strip of copper band atop the front panel. Seems the Marconi company was real stingy with the nameplate data. The title "Telegraph" Transmiiter is what came from the E-bay seller, hence I am also trying to get a confirmation of the name. Are there any similar devices made by other manufacturers?

http://www.jproc.ca/marconi/tt.html

--
Regards,
Jerry Proc
E-mail: jerry7proc at yahoo.com
____
BoatAnchors mailing list
BoatAnchors at theporch.com
https://minime.theporch.com/mailman/listinfo/boatanchors

From jerry7proc at yahoo.com Sat May 21 22:41:12 2011
From: jerry7proc at yahoo.com (Jerry Proc)
Date: Sat, 21 May 2011 19:41:12 -0700 (PDT)
Subject: [BoatAnchors] What Is It?
In-Reply-To: <19c9f.500a77f0.3b0999fc@aol.com>
Message-ID: <572814.16894.qm@web112306.mail.gq1.yahoo.com>

Hi Will and to the others who answered privately,
?
This is now confirmed to be?a portable spark gap transmiiter. Thanks for connection to the SCR-65. I have updated the document with this new information.

--
Regards,
Jerry Proc
E-mail: jerry7proc at yahoo.com

--- On Sat, 5/21/11, W0EOM at aol.com <W0EOM at aol.com> wrote:

From: W0EOM at aol.com <W0EOM at aol.com>
Subject: Re: [BoatAnchors] What Is It?
To: jerry7proc at yahoo.com
Received: Saturday, May 21, 2011, 6:43 PM

Jerrry? - the Connecticut? SCR-65 transmitter was of similar construction.? It was used in WW 1 in aircraft.
?
Will
?

In a message dated 5/21/2011 2:02:55 P.M. Pacific Daylight Time, jerry7proc at yahoo.com writes:
Hello Everyone,

I have just finished adding to what I believe to be, the oldest artifact in my Canadian Marconi virtual museum. Its a Telegraph Transmitter. Does anyone know exactly what it might have been used for? Especially curious, is the coiled strip of copper band atop the front panel. Seems the Marconi company was real stingy with the nameplate data. The title "Telegraph" Transmiiter is what came from the E-bay seller, hence I am also trying to get a confirmation of the name. Are there any similar devices made by other manufacturers?

http://www.jproc.ca/marconi/tt.html

--
Regards,
Jerry Proc
E-mail: jerry7proc at yahoo.com
____
BoatAnchors mailing list
BoatAnchors at theporch.com
https://minime.theporch.com/mailman/listinfo/boatanchors

From wb0eq at yahoo.com Sun May 22 11:15:02 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Sun, 22 May 2011 08:15:02 -0700 (PDT)
Subject: [BoatAnchors] Capacitor ESR discussion
Message-ID: <137340.68017.qm@web45609.mail.sp1.yahoo.com>

This note is from a continuing discussion on <TekScopes at yahoogroups.com> on the subject of capacitor ESR & its effect on circuit performance. They haven't really

addressed capacitor leakage so I've added this & thought you might be interested, too.
===

There's a little more to the ESR & capacitor story.

A capacitor can be modeled (for out purposes) as a "black box" with two items in series (although it can be done in a more much sophistated way with more than just these elements):

#1. A resistor which represents the Equivalent Series (internal) Resistance ESR of the capacitor; it tends to limit the current flow into and out of the capacitor; this can be very important in power supply apps.

#2. A capacitor in parallel with a resistor which represents the Leakage Resistance of the capacitor. Because it's in parallel with the actual capacitor element, it is what's responsible for the capacitor losing its charge with time, self discharge.

Put #1 and #2 in series, and, voila, our equivalent capacitor circuit.

As you might imagine, if you mentally replace the caps in a circuit with their equivalent circuit (#1 & #2 together) and assign values to ESR and R(leakage), the circuit may want to perform quite different than intended, even bizarrely! It can be quite a puzzler.

Item #1 is quanified by an ESR tester; ESR which is basically inherent to the battery although it can vary a lot with temperature. It is generally relatively low in value. I see plenty of designs for them on the web.

Item #2 varies with the kind of capacitor. The leakage of electrolytic capacitors is called leakage current; it can allow current on the order of milliamps (it varies with capacitance & voltage rating). The leakage of non-electrolytics is called insulation resistance; it is measured in tens or hundreds of megohms. The latter is is generally much higher than the former.

My favorite way to measure capacitor leakage is with a capacitor checker such as the Sprague TO-5, -6 & -6A. These are boat anchor units using tubes. I find them at electronic flea markets and eBay for pretty cheap; they are perfectly serviceable. They also measure capacitance and the power factor of electrolytic caps.

Many electrolytic caps showing excessive leakage can be reformed by using a cap checker to put a gradually increasing DC voltage across them & monitoring the leakage current. I limit it to about 10 mA in the beginning to avoid excessive internal heating; as this current falls, I am able to increase the applied voltage, but not exceeding the cap's rated voltage. The process can take 30 minutes or more for caps that have been idle for long periods of time, for the leakage current to settle down at its rated voltage.

The manuals for the all these Sprague cap checkers are available for free download on the web; they contain very useful tables of acceptable values for leakage current, leakage resistance & power factor for caps. See for example:

http://bama.edebris.com/manuals/sprague/TO-6

Note that the tables of allowable values has changed in the TO-6 vs. TO-6A manuals due to advances in capacitor design; I use the older tables for older caps.

==

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From spr at earthlink.net Sun May 22 11:59:35 2011
From: spr at earthlink.net (Scott Robinson)
Date: Sun, 22 May 2011 08:59:35 -0700
Subject: [BoatAnchors] Capacitor ESR discussion
In-Reply-To: <137340.68017.qm@web45609.mail.sp1.yahoo.com>
References: <137340.68017.qm@web45609.mail.sp1.yahoo.com>
Message-ID: <4DD932E7.7080309@earthlink.net>

Folks,

John, thanks for the very good capacitor equivalent circuit description. Let me add a little more info.

First, some numbers for leakage resistance in plastic film capacitors. I have a megger and can read up to about 500,000 megohms resistance.

Paper capacitors, even ones that have never been used, are now all quite leaky, maybe 1-20 megohms.

The yellow axial leaded parts that many of us use, and that were sold for a long time by Antique Electronics Supply, usually show a little leakage at 50,000 megohms.

Sprague orange drops show no leakage I can measure.

The yellow ones work fine; 50,000 megohms is a very large resistance. I mention them and the orange drops just to present information that I have. For example, a 50,000 meg leakage coupling cap feeding a 1 meg grid leak resistor from a 200 v plate circuit would only raise the grid voltage by 200x 1/50,000 or 4 millivolts.

Electrolytic capacitors:

Leakage for modern aluminum electrolytics is generally specified as no more than 0.03 x C x V, where C is the capacitance in Farads and V the voltage rating. This gives, for example, 0.6 mA for a 47 uF 450 V part. For old or NOS filter caps, I generally am happy to use them if they are well below 5 mA.

The ESR of electrolytic caps is actually a major problem in switching power supplies. These caps are the first thing to fail in most such designs, due to self heating cause by ripple current flowing in the ESR. They can get hot enough to boil the water inside them and blow their seals.

(Side issue, not BA but you might have some of this gear--used to keep track of your tube stash or BA collection of course...): in the mid-2000s a lot of bad electrolytics were made. They worked inf when new, but not a few years later. The tale I heard is that some guy worked for one of the big Japanese capacitor companies for a while and stole the recipe for the soup that goes inside, and took it to (as the story goes) a Taiwanese company, who then proceeded to use it. Unfortunately, he had stolen *most* of the recipe, the missing bit being whatever makes them last longer. So if your router, cable modem, or computer video screen of aobut that age has died and you know how to do pc board soldering, look inside at the large electrolytic caps. If their ends are bulging rather than flat or have black goo on them, replace those parts and you may have a working box again. I buy only UCC, Panasonic. or Nichicon eletrolytics for this purpose.

If you have an oscilloscope, you can use it to decide whether to keep using the old filter caps in a radio that doesn't have hum or other filter cap failure symptoms. If you look at the ripple (do use a X10 or, better, a X100 probe so as not to blow up the front end of your scope!) you shoudl see a sawtooth, usually about 20-40 v P-P at the rectifier tube filament. If the sawtooth has spikes at the tops of the teeth, that's a capacitor that is on its way out and should probably be replaced. What you are seeing is the ripple current flowing through the ESR, creating the spikes.

FWIW,

/scott

On 5/22/11 8:15 AM, John Sehring wrote:
> This note is from a continuing discussion on<TekScopes at yahoogroups.com> on the subject of capacitor ESR& its effect on circuit performance. They haven't really addressed capacitor leakage so I've added this& thought you might be interested, too.

> ===
>
> There's a little more to the ESR& capacitor story.
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> A capacitor can be modeled (for out purposes) as a "black box" with two items in series (although it can be done in a more much sophistated way with more than just these elements):
>
> #1. A resistor which represents the Equivalent Series (internal) Resistance ESR of the capacitor; it tends to limit the current flow into and out of the capacitor; this can be very important in power supply apps.
>
> #2. A capacitor in parallel with a resistor which represents the Leakage Resistance of the capacitor. Because it's in parallel with the actual capacitor element, it is what's responsible for the capacitor losing its charge with time, self discharge.
>
> Put #1 and #2 in series, and, voila, our equivalent capacitor circuit.
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> As you might imagine, if you mentally replace the caps in a circuit with their equivalent circuit (#1& #2 together) and assign values to ESR and R(leakage), the circuit may want to perform quite different than intended, even bizarrely! It can be quite a puzzler.
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> Item #1 is quanified by an ESR tester; ESR which is basically inherent to the battery although it can vary a lot with temperature. It is generally relatively low in value. I see plenty of designs for them on the web.
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> Item #2 varies with the kind of capacitor. The leakage of electrolytic capacitors is called leakage current; it can allow current on the order of milliamps (it varies with capacitance& voltage rating). The leakage of non-electrolytics is called insulation resistance; it is measured in tens or hundreds of megohms. The latter is is generally much higher than the former.
>
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>
> Many electrolytic caps showing excessive leakage can be reformed by using a cap checker to put a gradually increasing DC voltage across them& monitoring the leakage current. I limit it to about 10 mA in the beginning to avoid excessive internal heating; as this current falls, I am able to increase the applied voltage, but not exceeding the cap's rated voltage. The process can take 30 minutes or more for caps that have been idle for long periods of time, for the leakage current to settle down at its rated voltage.
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> The manuals for the all these Sprague cap checkers are available for free download on the web; they contain very useful tables of acceptable values for leakage current, leakage resistance& power factor for caps. See for example:
>
>   http://bama.edebris.com/manuals/sprague/TO-6
>
> Note that the tables of allowable values has changed in the TO-6 vs. TO-6A manuals due to advances in capacitor design; I use the older tables for older caps.
> ===
>
> --John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>

From wb0eq at yahoo.com Sun May 22 13:11:03 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Sun, 22 May 2011 10:11:03 -0700 (PDT)
Subject: [BoatAnchors] ESR
Message-ID: <147483.39057.qm@web45607.mail.sp1.yahoo.com>

Thanks so much, Scott, for adding to my comments on capacitor ESR & leakage.

Great list here, so much knowledge & the willingness to share it. I learn so much & am thankful. It's a good day for me when I've managed to get (hopefully) just a bit smarter.

BTW, latest anthropology theory about very early humanoid society is that they had a tremendous advantage: willingness to share! Amen.

--John Sehring WB0EQ/VE6 Okotoks, Alberta, Canada

From wb3fau at att.net Sun May 22 14:54:08 2011
From: wb3fau at att.net (wb3fau at att.net)
Date: Sun, 22 May 2011 11:54:08 -0700 (PDT)
Subject: [BoatAnchors] ESR caps
Message-ID: <578721.66734.qm@web180205.mail.gq1.yahoo.com>

my Heath IM-28 has a power factor correction setting- it gives a percentage. I have found any electrolytic showing more than 10% correction is a good indicator of a cap needing replacement- Russ.

From gumbear at pacbell.net Sun May 22 20:14:36 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Sun, 22 May 2011 17:14:36 -0700
Subject: [BoatAnchors] Capacitor ESR discussion
References: <137340.68017.qm@web45609.mail.sp1.yahoo.com>
    <4DD932E7.7080309@earthlink.net>
Message-ID: <001301cc18de$6da3cf00$fe9d480c@KB6NAX>

> John, thanks for the very good capacitor equivalent circuit description. Let me add a little more info. .....

Excellent brief on how to live with capacitors, Scott. I will add my 1 1/2 cents for what it's worth. ESR is a problem, as you mentioned, for switching power supplies. At line frequency, a power supply cap is required to be "topped off" at 16.7millisecond (60Hz0) or 8.33 millisecond (120Hz) intervals. But a switching power supply requires a cap to be topped off every 10 (100kHz) to 40 (25kHz) MICROseconds, about 1000 times more often than a line frequency operated power supply.

The more often a capacitor gets charged the less capacitance is required to maintain the required charge balance to supply power supply load current. That would suggest the ESR would be proportionately less due to a smaller capacitor physical size. Not so because of the way electrolytic capacitors are built and their chemistry mechanics. If both capacitors have to process equivalent energy magnitudes the higher frequency types are much smaller in physical size. For equivalent engergy loss mechanisms the smaller capacitor cooling surface area is smaller and therefore internal operating temperature is higher. The amount (thickness) of dielectric required for both sizes of capacitor is the same for equivalent voltage ratings. With a smaller capacitor there is less electrolyte needed due to the smaller plate area, the effect being that ESR is in contraproportion to capacitance. If circuit operating voltages for the high frequency power supply is lower the currents are proportionately higher - there's no free lunch allowed under the laws of physics. So the rubric is that capacitor design must incorporate reduced ESR per unit of capacitance to operate at increased frequency. On top of that difficulty the trend to produce ever physically smaller components makes efficiency improvement even more challenging. Thus the wave of smaller, lower ESR and higher operating temperature capacitors to come on the market in the last 30 or so years.

For those who grimace about not knowing if they have the lastest high temperature low ESR capactors in their headphone amplifiers.......

Arden Allen
KB6NAX

Properly trained a man can be
dog's best friend. -Corey Ford

From gumbear at pacbell.net Mon May 23 22:12:49 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Mon, 23 May 2011 19:12:49 -0700
Subject: [BoatAnchors] Twist-Lok rebuilding
Message-ID: <000701cc19b8$19b3c370$4b9e480c@KB6NAX>

Recanners,

I must have rebuilt a dozen or so twist-lok electrolytics over the last few years. It goes without saying that hanging leaded capacitors off of the terminals of a defunct twist-lok looks disgusting. But I was never happy with the method of rejoining the can halves after stuffing new caps inside. I would apply a bead of epoxy around the can where I cut it in two just above the larger diameter base end. That was no doubt the weak spot that would fail if the can got pulled on or jolted by the requisite hand full of thumbs. I tried inserting inside a reinforcing plastic ring cut from ABS piping but there wasn't enough room in too many cases. So the rebuilt cans went back into equipment followed by a prayer. Then the other day the ultimate solution appeared in a vision as I prepared for the end of the world. Every boat builder knows about fiberglass and epoxy laminting and how strong it is. Having experienced how well super glue bonds polyester fabric from a few accidents to my clothing it came to me that ribbon, the kind the ladies like to wear in their hair and so forth, is pure polyester fabric. Polyester is used to make dial cords and stretch resistant rope and cord so polyester fabric-epoxy laminting is a cinch. Off to the craft store I went to purchase a roll of 3/4 wide white ribbon (silver satin ribbon for the ultimate rebuild). The technique to rejoin the can halves is as follows: First, when cutting the twist-lok can in two, cut it at 3/8 inch above the wider base. Clamp the can halves back together in a wide vice, woodwright's clamp, C clamp, etc. I use a tube shield over the terminal end for my vice jaw to rest on with a bit of rubber between which assures an even pressure. The pressure will assure good eletrical continuity between halves. Deposit a small amount of super glue in a narrow line across the seam and stick the end of the ribbon to the can. Mix up some longer working time epoxy (none of that crappy 5 minute stuff) and paint the epoxy around the can where the ribbon will wrap. As you wrap the ribbon paint epoxy on to thoroughly impregnate the ribbon. Continue for two layers of ribbon and then set the can in a warm place to cure over night or if warm enough in a few hours. The white ribbon also serves as a label ready to be inscribed by Sharpie with the signature of the artisan twist-lok rebuilder or just plain old microfarad and voltage info.

Arden Allen
KB6NAX

The great pleasure of a dog is that you
may make a fool of yourself with him
and not only will he not scold you,
but he will make a fool of himself too.
-Samual Butler

From wb3fau at att.net Tue May 24 20:36:47 2011
From: wb3fau at att.net (wb3fau at att.net)
Date: Tue, 24 May 2011 17:36:47 -0700 (PDT)
Subject: [BoatAnchors] replacement of electrolytic caps
Message-ID: <247735.94497.qm@web180206.mail.gq1.yahoo.com>

A question for the experts- is it OK to replace   power supply electrolytics with larger values? Original value of 40uf replaced by 100uf? Russ.

From shriver1 at comcast.net Tue May 24 20:44:47 2011
From: shriver1 at comcast.net (Shriver)
Date: Tue, 24 May 2011 20:44:47 -0400
Subject: [BoatAnchors] replacement of electrolytic caps
In-Reply-To: <247735.94497.qm@web180206.mail.gq1.yahoo.com>
References: <247735.94497.qm@web180206.mail.gq1.yahoo.com>
Message-ID: <4DDC50FF.1020408@comcast.net>

At least for tube rectifiers, that's a definite "no". The larger the capacitor, the higher the peak charging current each cycle. Easy to fry the rectifier tube. It also increases the stress on the power transformer, since it has to provide those current spikes. Also throws more "spatter" back into your power line.

Now, this is really about the input section of the filter. After a dropping resistor or two, you can often use a larger cap for the later stages handling audio stages of the circuit.

-- John Shriver

On 5/24/2011 8:36 PM, wb3fau at att.net wrote:
> A question for the experts- is it OK to replace   power supply
> electrolytics with larger values? Original value of 40uf
> replaced by 100uf? Russ.

From 4cx250b at muohio.edu Tue May 24 20:47:35 2011
From: 4cx250b at muohio.edu (Jim Garland)

Date: Tue, 24 May 2011 18:47:35 -0600
Subject: [BoatAnchors] replacement of electrolytic caps
In-Reply-To: <247735.94497.qm@web180206.mail.gq1.yahoo.com>
References: <247735.94497.qm@web180206.mail.gq1.yahoo.com>
Message-ID: <9808CA0616384D488F77CEBE920A74A7@JimsOffice>

Probably better to replace a 40uF with a 47uF (a standard value) cap, Russ.
The 100uF cap would probably work fine, but the extra surge current at
powerup may not be good for other components.
73,
Jim W8ZR

> -----Original Message-----
> From: boatanchors-bounces at theporch.com
[mailto:boatanchors-bounces at theporch.com]
> On Behalf Of wb3fau at att.net
> Sent: Tuesday, May 24, 2011 6:37 PM
> To: boatanchors at theporch.com
> Subject: [BoatAnchors] replacement of electrolytic caps
>
> A question for the experts- is it OK to replace   power supply
> electrolytics with larger values? Original value of 40uf
> replaced by 100uf? Russ.
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors

From spr at earthlink.net Wed May 25 03:25:10 2011
From: spr at earthlink.net (Scott Robinson)
Date: Wed, 25 May 2011 00:25:10 -0700
Subject: [BoatAnchors] replacement of electrolytic caps
In-Reply-To: <247735.94497.qm@web180206.mail.gq1.yahoo.com>
References: <247735.94497.qm@web180206.mail.gq1.yahoo.com>
Message-ID: <4DDCAED6.4060507@earthlink.net>

Hi Russ,

That depends. For the input filter cap--the one connected directly to the cathode of the rectifier tube--consult the RCA tube manual for the maximum recommended value. Too large a capacitance here shortens the charging time each cycle and therefore raises the peak current, which beats up the rectifier.

For caps after the filter choke(s) or resistor(s), use as much as you like.

Regards,

Scott

On 5/24/11 5:36 PM, wb3fau at att.net wrote:
> A question for the experts- is it OK to replace   power supply
> electrolytics with larger values? Original value of 40uf
> replaced by 100uf? Russ.
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>

From gumbear at pacbell.net Wed May 25 16:15:57 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Wed, 25 May 2011 13:15:57 -0700
Subject: [BoatAnchors] replacement of electrolytic caps
References: <247735.94497.qm@web180206.mail.gq1.yahoo.com>
     <4DDCAED6.4060507@earthlink.net>
Message-ID: <000e01cc1b18$92a391a0$5d9e480c@KB6NAX>

> ....For caps after the filter choke(s) or resistor(s), use as much as
you like.

Part of that is not good advice, Scott. With respect to a choke input (no cap at cathode of rectifier) too large a capacitor could cause the capacitor-inductor combination to be resonant at the ripple frequency thus undoing ripple suppression. Always check ripple when adjusting filter values where a choke is used.

Arden Allen
KB6NAX

If you pick up a starving dog and
make him prosperous, he will not
bite you. This is the principle
difference between a dog and
a man. -Mark Twain

From kd5byb at kd5byb.net Wed May 25 18:36:27 2011
From: kd5byb at kd5byb.net (Ben Hall)
Date: Wed, 25 May 2011 17:36:27 -0500
Subject: [BoatAnchors] replacement of electrolytic caps
In-Reply-To: <4DDCAED6.4060507@earthlink.net>

References: <247735.94497.qm@web180206.mail.gq1.yahoo.com>
     <4DDCAED6.4060507@earthlink.net>
Message-ID: <4DDD846B.9080903@kd5byb.net>

Evening all,

Great responses so far. I'll add one more thing - take a look at the tolerances of the original capacitors. I've seen some that were x uF, +80%, -20%. I think from an R-390A, maybe?

I've seen others that were fairly wide tolerance - the above example is extreme.

I'd use a 47uF to replace a 40uF, especially if it is a cap-input filter.

thanks,
ben

On 5/25/2011 2:25 AM, Scott Robinson wrote:
> Hi Russ,
>
> That depends. For the input filter cap--the one connected directly to
> the cathode of the rectifier tube--consult the RCA tube manual for the
> maximum recommended value. Too large a capacitance here shortens the
> charging time each cycle and therefore raises the peak current, which
> beats up the rectifier.
>
> For caps after the filter choke(s) or resistor(s), use as much as you like.
>
> Regards,
>
> Scott
>
> On 5/24/11 5:36 PM, wb3fau at att.net wrote:
>> A question for the experts- is it OK to replace power supply
>> electrolytics with larger values? Original value of 40uf
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>> BoatAnchors mailing list
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>> https://minime.theporch.com/mailman/listinfo/boatanchors
>>
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>

>

From bkemp at bobkemp.com Wed May 25 18:54:23 2011
From: bkemp at bobkemp.com (Bob Kemp)
Date: Wed, 25 May 2011 17:54:23 -0500
Subject: [BoatAnchors] 6HF5's wanted
Message-ID: <CE23DB94AA7B41B2A6C55AE7A5CF6D26@robert7549ca67>

Anyone have a pair of 6HF5's ...Got to get a SR400 up and running. Don't
want to spend $40 for a pair...something reasonable, please.   Matched pair
would be great.
Bob
wa0vrc

From wb3fau at att.net Wed May 25 20:15:41 2011
From: wb3fau at att.net (wb3fau at att.net)
Date: Wed, 25 May 2011 17:15:41 -0700 (PDT)
Subject: [BoatAnchors] electrolytic caps
Message-ID: <568192.89937.qm@web180201.mail.gq1.yahoo.com>

thanks to all who responded. i thought the   same as most of you,
tough on power tranny and rectifier. Application is a Heath DX-40.
Caps were bad. did not have any 47ufs to replace with, so used the
100uf caps on hand. Works OK, but will keep and eye on it...

From gumbear at pacbell.net Thu May 26 02:42:10 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Wed, 25 May 2011 23:42:10 -0700
Subject: [BoatAnchors] replacement of electrolytic caps - correction
References:
<247735.94497.qm@web180206.mail.gq1.yahoo.com><4DDCAED6.4060507@earthlink.net>
     <000e01cc1b18$92a391a0$5d9e480c@KB6NAX>
Message-ID: <002501cc1b70$0d94bb80$a79d480c@KB6NAX>

I was reprimanded by Scott for not taking into account the actual values of
filter chokes and capacitors encountered in typical power supplies. Having
commented from my poor memory what the ARRL handbook advises my comment that
a larger filter capactor of the right size could cause a resonant condition
was backwards as power supply filters are normally resonant **below** the
ripple frequency and increasing the value of capacitance would only reduce
the resonant frequency further.

Here's what my '56 ARRL Handbook
says in Chapter 7: "Resonance effects ih the series circuit across the

output of the rectifier which is formed by the first choke and the first filter capacitor must be avoided, since the ripple voltage would build up to large values. This not only is the opposite acion to that for which the filter is intended, but also may cause excessive rectifier peak currents and abnormally high inverse peak voltages. ..... (for 120 Hz ripple) resonance will occur when the product of choke inductance in henrys times capacitor capacitance in microfarads is equal to 1.77...... ."

Oh well, I get sparks occasionaly too...

Arden Allen
KB6NAX

The great pleasure of a dog is that you
may make a fool of yourself with him
and not only will he not scold you,
but he will make a fool of himself too.
-Samual Butler

From oldradio at comcast.net Thu May 26 04:35:06 2011
From: oldradio at comcast.net (oldradio at comcast.net)
Date: Thu, 26 May 2011 08:35:06 +0000 (UTC)
Subject: [BoatAnchors] John Dilks, QST Vintage Radio Columnist to Speak at Ham-Com June 10-11
In-Reply-To: <2033443413.961435.1306398859482.JavaMail.root@sz0128a.westchester.pa.mail.comcast.net>
Message-ID: <586484495.961443.1306398906568.JavaMail.root@sz0128a.westchester.pa.mail.comcast.net>

05/25/2011
John Dilks, K2TQN, the QST Vintage Radio columnist, will be speaking at Ham-Com, the ARRL National Convention, in Plano, Texas.

John?s presentation is titled ?Wireless North Pole, Don Mix 1923 Adventure? and he?ll be offering it Friday at 4PM in Fairview rooms 1 and 2, and Saturday at 8AM in Northbrook room 3

As John sets the scene for his presentation . . .

?Imagine for a minute you are a young 21 year old ham living in Connecticut with your parents. You have recently completed your schooling and are thinking about a career in radio. Self-taught, you are able to build or troubleshoot any radio circuit; you have honed your Morse skills and are one of the top radio operators around and well known by your peers. So what are you going to do? It is early winter 1923 and you receive an invitation from Hiram Percy Maxim to apply for the position of radio operator on an expedition to the North Pole.

?It sounds exciting doesn't it? The only hitch is, you will be leaving in the spring and the trip will last for a full year. You will be spending most of your time on an 88 foot schooner and anywhere you can walk from there. You will be a working crew member but your primary duty is being responsible for keeping contact with the outside world on a ham radio set.?

The story was taken from the daily journal written by Don Mix. The presentation includes original photography taken by Don Mix and Captain Donald MacMillan during the expedition.

Hamfest INFO - http://www.hamcom.org/

73, John Dilks, K2TQN

-.-

From wb0eq at yahoo.com Thu May 26 15:00:47 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Thu, 26 May 2011 12:00:47 -0700 (PDT)
Subject: [BoatAnchors] Old School HV Capacitor Analyzers - better than
     TO-6?
Message-ID: <589359.2205.qm@web45606.mail.sp1.yahoo.com>

I find an interesting dichotomy between the Tektronix o'scope and the Boat Anchor meetings.? I'm sending this note to both meetings.

The Tek scope meeting folks talk about and measure ESR to help find unusable capacitors.? The Boatanchorites are concerned with leakage current in bad caps.

I think the difference can be explained from the type of circuitry being looked at.? Many (most?) of the Tek scopes are solid state; voltages are in most cases "low" and so currents tend to be higher.? ESR is more of an issue than leakage current in these apps.

Boatanchorites are looking exclusively at tube-type equipment.? Operating voltages are much higher than with ss circuits.? Leakage currents (esp. thru electrolytics) are of more importance.

I have a nice Sprague TO-6A to ck capacitance, power factor, leakage currents, and insulation resistance.? That helps me on the boat anchor side.?

However, see TM-11-5043-12 and TM-11-5043-35 at http://www.liberatedmanuals.com/all.mpl for a MIL-spec cap checker.

I will order up an ESR tester, probably the one called "Blue" (is that the best one by consensus here?).? That way I will be able to consider all factors affecting capacitor performance, no matter what the exact application it's in.

--John Sehring? WB0EQ/VE6? Okotoks, Alberta, Canada

From zengmeiste at aol.com Thu May 26 17:07:05 2011
From: zengmeiste at aol.com (TERRY)
Date: Thu, 26 May 2011 17:07:05 -0400 (EDT)
Subject: [BoatAnchors] replacement of electrolytic caps
In-Reply-To: <4DDD846B.9080903@kd5byb.net>
References:
<247735.94497.qm@web180206.mail.gq1.yahoo.com><4DDCAED6.4060507@earthlink.net>
<4DDD846B.9080903@kd5byb.net>
Message-ID: <8CDE9FFFFF2BD6A-6AC-31337@webmail-m041.sysops.aol.com>

hiyas! I'm surprised no one suggested creating a 50uf cap by putting two of your 100uf in series (with associated parallel resistors, of course). As a temporary (we all know what that means..) fix, it'd be OK, eh?

Arden et al? What do you think (or was this already suggested and I missed those posts)?

73, Terry KC9KEL

-----Original Message----- From: Ben Hall <kd5byb at kd5byb.net>

<snip>

I'd use a 47uF to replace a 40uF, especially if it is a cap-input filter.thanks,ben

---

From gumbear at pacbell.net Fri May 27 02:30:34 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Thu, 26 May 2011 23:30:34 -0700
Subject: [BoatAnchors] replacement of electrolytic caps
References:
<247735.94497.qm@web180206.mail.gq1.yahoo.com><4DDCAED6.4060507@earthlink.net><4DDD846B.9080903@kd5byb.net>
<8CDE9FFFFF2BD6A-6AC-31337@webmail-m041.sysops.aol.com>

Message-ID: <001401cc1c37$a19be7f0$539e480c@KB6NAX>

> ....Arden et al? What do you think (or was this already suggested and
I
missed those posts)?

You can do all kinds of things if it's just for temporary but I think most folks like to put their equipment into good shape and there's not much extra space for filter caps in most rigs.

Arden Allen
KB6NAX

Adopt a shelter dog,
save an innocent life,
and make a friend forever =:-)

From hurstjsj at verizon.net Thu May 26 20:37:26 2011
From: hurstjsj at verizon.net (John Hurst)
Date: Thu, 26 May 2011 17:37:26 -0700
Subject: [BoatAnchors] replacement of electrolytic caps
In-Reply-To: <4DDCAED6.4060507@earthlink.net>
References: <247735.94497.qm@web180206.mail.gq1.yahoo.com>
     <4DDCAED6.4060507@earthlink.net>
Message-ID: <97FDE3C79C914CE38C1C764A4EFDCDC2@office>

Most of the work necessary for capacitance input filter design was done by O.H. Schade in 1943. His design curves are in the Radiotron Designer's H.B. and in many rectifier hand books. A good example is: http://www.ieeta.pt/~alex/docs/ApplicationNotes/Rectifier%20Applications%20Handbook.pdf , pages 119, 120.

If you know Rs, Rl and C you can determine, 1) the DC voltage as a percentage of the transformer's unloaded voltage, (2) the RMS current (I^2 R heating in the transformer), and 3) the peak rectifier current. Voltage regulation is also easy to determine.

The source resistance, Rs, is the hardest to estimate for tube rectifiers since it consists of the transformer's source impedance (looking into the secondary) plus the diode's dynamic resistance which often dominates Rs.

The load resistance Rl , is just the voltage on C divided by the total B+ current.

In *conservatively designed* power supplies the operating point is on one of the right hand plateaus of these curves. If this is the case then increasing C will have a negligible effect on the DC voltage, the rectifier peak current and the RMS current in the transformer.

An easy way to see if the C can be safely increased would be to check the rise in B+ when additional capacitance is added to the nominal value. If the voltage rises only a percent or two, it's safe. Alternatively you can check the change in line input power with a wattmeter.

If the voltage or input power *does* rise significantly then you can safely use a larger capacitor if you increase Rs by adding some resistance between the rectifier cathode and C Add enough to bring the B+ back to its nominal value.

BTW similar issues arise when using silicon diodes to replace a vacuum rectifier. This is usually a bad idea unless series resistance is added to get Rs back in range. .Even though you're saving the heater power (usually 10 or 15 watts) you will significantly increase the I^2 R heating of the HV secondary and possibly the primary winding as well. With today's higher line voltages you may even want to decrease the B+ by an additional 10 to 20%. This can substantially decrease the transformer's temp rise.

73,

John, KU6X

From: boatanchors-bounces at theporch.com
[mailto:boatanchors-bounces at theporch.com] On Behalf Of Scott Robinson
Sent: Wednesday, May 25, 2011 12:25 AM
To: wb3fau at att.net
Cc: boatanchors at theporch.com

Subject: Re: [BoatAnchors] replacement of electrolytic caps

Hi Russ,

That depends. For the input filter cap--the one connected directly to the cathode of the rectifier tube--consult the RCA tube manual for the maximum recommended value. Too large a capacitance here shortens the charging time each cycle and therefore raises the peak current, which beats up the rectifier.

For caps after the filter choke(s) or resistor(s), use as much as you like.

Regards,

Scott

On 5/24/11 5:36 PM, wb3fau at att.net wrote:
> A question for the experts- is it OK to replace   power supply
> electrolytics with larger values? Original value of 40uf
> replaced by 100uf? Russ.
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>

____
BoatAnchors mailing list
BoatAnchors at theporch.com
https://minime.theporch.com/mailman/listinfo/boatanchors

No virus found in this message.
Checked by AVG - www.avg.com
Version: 10.0.1204 / Virus Database: 1435/3645 - Release Date: 05/18/11
Internal Virus Database is out of date.

From jmccarty at alcatel-lucent.com Fri May 27 12:26:28 2011
From: jmccarty at alcatel-lucent.com (John J Mccarty)
Date: Fri, 27 May 2011 11:26:28 -0500
Subject: [BoatAnchors] HQ-170 help/part needed
Message-ID: <4DDFD0B4.1050307@lucent.com>

My friend Murray, W9EHQ was using his HQ-170 (no suffix) last Wednesday night when he noticed the overpowering smell of burning resistor. Opening the rx showed that R9, a 1K resistor had brunt up. Bottom line, the cap built into the base of T1 has arced over to ground (silver migration?) and had also burned up. T1 is a two frequency transformer (455 and 3305 kHz). Does anyone have a junker HQ-170 (plain) that has a good T1 (part numbers on the side of the can are 26402 & 57411) that they are willing to part with or failing that does anyone know the values for the two internal caps associated with T1?

Thanks and have a great weekend.

John n9hrt

From anchor at ec.rr.com Fri May 27 13:21:38 2011
From: anchor at ec.rr.com (Al Parker)
Date: Fri, 27 May 2011 13:21:38 -0400
Subject: [BoatAnchors] HQ-170 help/part needed
In-Reply-To: <4DDFD0B4.1050307@lucent.com>
References: <4DDFD0B4.1050307@lucent.com>
Message-ID: <4DDFDDA2.2090409@ec.rr.com>

Hi John,
It is possible to repair those xfmrs, I've done it, as have others. If it's one at the edge of the chassis it may be possible to do it without removing it.
Either way, you dig out the burned molded in capacitor, make sure the coil is OK & connected to the xfmr terminals, and put a new discrete cap underneath. The cap values may be on the schematic. I thought I'd taken some pix of the procedure, but can't find them right now.
73,
Al, W8UT
www.boatanchors.org
www.hammarlund.info

"There is nothing -- absolutely nothing -- half so much
worth doing as simply messing about in boats"
Ratty, to Mole

On 5/27/2011 12:26 PM, John J Mccarty wrote:
>
> My friend Murray, W9EHQ was using his HQ-170 (no suffix) last Wednesday night
> when he noticed the overpowering smell of burning resistor. Opening the rx
> showed that R9, a 1K resistor had brunt up. Bottom line, the cap built into the
> base of T1 has arced over to ground (silver migration?) and had also burned up.

> T1 is a two frequency transformer (455 and 3305 kHz). Does anyone have a junker
> HQ-170 (plain) that has a good T1 (part numbers on the side of the can are 26402
> & 57411) that they are willing to part with or failing that does anyone know the
> values for the two internal caps associated with T1?
>
>
> Thanks and have a great weekend.
>
>
> John n9hrt
>
> ____
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>

From spr at earthlink.net Fri May 27 13:39:48 2011
From: spr at earthlink.net (spr at earthlink.net)
Date: Fri, 27 May 2011 10:39:48 -0700 (GMT-07:00)
Subject: [BoatAnchors] HQ-170 help/part needed
Message-ID: <33444755.1306517988989.JavaMail.root@elwamui-milano.atl.sa.earthlink.net>

HI JOhn,

The usual value of resonating cap for a 45 kHz IF is about 110 pF. If they scale the L and C both by a factor of about 6 to get to 3055 KHz, you'd have about a 18 pF cap, but you'd have to experiment to verify all that.

Regards,

Scott

-----Original Message-----
>From: Al Parker <anchor at ec.rr.com>
>Sent: May 27, 2011 10:21 AM
>To: John J Mccarty <jmccarty at alcatel-lucent.com>
>Cc: Old Tube Radios <boatanchors at theporch.com>
>Subject: Re: [BoatAnchors] HQ-170 help/part needed
>
>Hi John,
>   It is possible to repair those xfmrs, I've done it, as have others. If
>it's one at the edge of the chassis it may be possible to do it without
>removing it.

```
>    Either way, you dig out the burned molded in capacitor, make sure the
>coil is OK & connected to the xfmr terminals, and put a new discrete cap
>underneath.  The cap values may be on the schematic.  I thought I'd
>taken some pix of the procedure, but can't find them right now.
>73,
>Al, W8UT
>www.boatanchors.org
>www.hammarlund.info
>
>"There is nothing -- absolutely nothing -- half so much
>worth doing as simply messing about in boats"
>Ratty, to Mole
>
>On 5/27/2011 12:26 PM, John J Mccarty wrote:
>>
>> My friend Murray, W9EHQ was using his HQ-170 (no suffix) last Wednesday night
>> when he noticed the overpowering smell of burning resistor. Opening the rx
>> showed that R9, a 1K resistor had brunt up. Bottom line, the cap built into the
>> base of T1 has arced over to ground (silver migration?) and had also burned up.
>> T1 is a two frequency transformer (455 and 3305 kHz). Does anyone have a junker
>> HQ-170 (plain) that has a good T1 (part numbers on the side of the can are
26402
>> &  57411) that they are willing to part with or failing that does anyone know
the
>> values for the two internal caps associated with T1?
>>
>>
>> Thanks and have a great weekend.
>>
>>
>> John n9hrt
>>
>> _______________________________________________
>> BoatAnchors mailing list
>> BoatAnchors at theporch.com
>> https://minime.theporch.com/mailman/listinfo/boatanchors
>>
>_______________________________________________
>BoatAnchors mailing list
>BoatAnchors at theporch.com
>https://minime.theporch.com/mailman/listinfo/boatanchors



From gumbear at pacbell.net  Fri May 27 17:49:09 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Fri, 27 May 2011 14:49:09 -0700
Subject: [BoatAnchors] replacement of electrolytic caps
```

References:
<247735.94497.qm@web180206.mail.gq1.yahoo.com><4DDCAED6.4060507@earthlink.net>
<97FDE3C79C914CE38C1C764A4EFDCDC2@office>
Message-ID: <002f01cc1cb9$dcaaa480$fa9d480c@KB6NAX>

> Most of the work necessary for capacitance input filter design was done by O.H. Schade in 1943. His design curves are in the Radiotron Designer's H.B. and in many rectifier hand books. ....

I might add that as long as you don't exceed the recommended maximum capacitance for given loading the vacuum tube rectifier will have its expected load life. That information is contained in the RCA tube manuals. As I prefer reliability before "upgrades" I stick to RCA's limits.

Silicon diode rectifiers, because their voltage drop is only about one volt, will put up with a lot of abuse as transformer and input filter cap suffer. A 20-30% increase in capacitance without doing an appraisal of the tradeoffs is not likely to get you into trouble.

If replacing a filter cap in a voltage doubler circuit keep the two capacitor values close to equal to prevent excess voltage on one of them.

Arden Allen
KB6NAX

If you get to thinking you're a person of
some influence, try ordering somebody
else's dog around. -Will Rogers

From gumbear at pacbell.net Fri May 27 18:02:50 2011
From: gumbear at pacbell.net (Arden Allen)
Date: Fri, 27 May 2011 15:02:50 -0700
Subject: [BoatAnchors] HQ-170 help/part needed
References: <4DDFD0B4.1050307@lucent.com>
Message-ID: <003001cc1cb9$de194fb0$fa9d480c@KB6NAX>

> ....does anyone know the
values for the two internal caps associated with T1?

If the 455kHz tank capacitor is the resonating capacitor its value is most likely 100pF. You can experiment with values for the 3305kHz transformer, start at 30pF to see where you are. The right value is the one that resonates with the slug at its previous penetration. Or if trimmer cap tuned the same amount of tweak. A little variation is tolerable.

Arden Allen

KB6NAX

From nu4g.radio at gmail.com Fri May 27 22:09:14 2011
From: nu4g.radio at gmail.com (Tom Norris)
Date: Fri, 27 May 2011 21:09:14 -0500
Subject: [BoatAnchors] Pete Millet Ebook Site - Now available on DVD (It's on Ebay, please don't beat me...)
Message-ID: <FDDA8DBD-9328-4B02-92A7-AA38EECECA6A@gmail.com>

There is a fellow who is selling an authorized copy, on DVD, of Pete Millet's AWESOME online tech library.
For those that do ebay it is item number milsurplus at mailman.qth.net. The fellow did a very good job of
it, and this is one of the very few site "rips" I've seen where the fellow actually asked the owner of the web
site if he could offer a disc archive.

For those not familiar with Pete Millet's web page, it's one of the best sources of free tech, engineering,
general electronics, tube references (including tube design texts) and audio-related textbooks in pdf format.

The main web page is located at www.pmillett.com/index.html

Lots of good reference material, deep engineering texts and other useful stuff. I can't say enough good things
about the folks that took the time to donate the material to Pete and I thank Pete for taking the time to host
an ever-growing number of reference books.

I do apologize for including an ebay listing, but as I put the word "ebay" in the subject line, I hope
the no-ebay crowd's email filters will spare them from reading this. heehee

Everyone have a GREAT weekend!

Tom Norris NU4G

From wb3fau at att.net Sat May 28 13:42:40 2011
From: wb3fau at att.net (wb3fau at att.net)
Date: Sat, 28 May 2011 10:42:40 -0700 (PDT)
Subject: [BoatAnchors] HQ-170-T1 -IF can
Message-ID: <240729.13153.qm@web180203.mail.gq1.yahoo.com>

a lot of these fail, in my case, the coils were OK. I replaced
the base with a used one from old IF can. 100 pf [silver mica] caps were
used for replacements. T2 is same problem, may want to

change now also before failure. 73 Russ.

From ddillman at igc.org Mon May 30 14:31:24 2011
From: ddillman at igc.org (Richard Dillman)
Date: Mon, 30 May 2011 11:31:24 -0700 (GMT-07:00)
Subject: [BoatAnchors] MRHS Fund Raiser - Field Seminar and Station Visit
Message-ID: <6489635.1306780284457.JavaMail.root@elwamui-cypress.atl.sa.earthlink.net>

Maritime Radio Historical Society Fund Raiser - Field Seminar and Station Visit

Date: 11 July 2011
Location: Point Reyes National Seashore Association (PRNSA), Point Reyes National Seashore, Point Reyes, CA.
Cost: $80 ($60 PRNSA members) All proceeds go to the MRHS

As many readers of these pages know, the work to restore and maintain the ex-KPH transmit and receive stations is supported financially out of the pockets of MRHS members and those kind folks who have made donations to The Cause. But now we are faced with projects like antenna repair and restoration that are beyond the ability of our small bank account to support. So we're trying something new - a MRHS fund raising event.

The MRHS, in cooperation with the Point Reyes National Seashore Association (PRNSA), will present a field seminar on the history of wireless and radio in West Marin county, California. Bill Ruck, Bay Area broadcast engineer and member of the MRHS Transmitter Department, will conduct the seminar which will include a lecture, photo slide show and an opportunity to visit the receive site at Point Reyes to see coast station KSM in operation.

Special Opportunity - Those with commercial radiotelegraph licenses may get them endorsed showing them to be operators at KSM, the last remaining Morse code coast station in the US. Those without a commercial license may operate K6KPH, the MRHS amateur radio station. Bring your own key and earphones or use ours.

It was Marconi?s dream to bridge the oceans and provide intercontinental communications at a rate that undercut the cost of the undersea cables. His signals first bridged the Atlantic in 1901. Only a little more than a decade later his international system was in place and functioning. During the golden age of maritime communications, the globe was populated with hundreds of coast stations, each with its own unique coverage, call sign and personality. Now there is only one such station left in existence and functioning in its original state with all its original components. Thanks in part to the Maritime Radio Historical Society and Point Reyes National Seashore, you can relive the historic days of ship to shore communications via the Marconi Radio. The day will start with a presentation of the history of the Marconi Radio and the Coast Stations, then you will venture out to the Coast Station to see it come to life and have the opportunity to talk with ships out at sea or possibly with someone in another country.

For more information see the PRNSA Web site at:

http://www.ptreyes.org/fieldseminars/seminarlistnaturalworld.shtml

For directions to the field seminar site see:

http://www.ptreyes.org/planavisit/directions.shtml

For more information about the contents of the seminar please contact Bill Rick at:

billruck at earthlink.net

This is a unique event that's not to be missed. We look forward to seeing you there!

VY 73,

RD

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Richard Dillman
Chief Operator, Coast Station KSM
Maritime Radio Historical Society
http://www.radiomarine.org
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From ddillman at igc.org Mon May 30 18:14:38 2011
From: ddillman at igc.org (Richard Dillman)
Date: Mon, 30 May 2011 15:14:38 -0700 (GMT-07:00)
Subject: [BoatAnchors] Corrected date: MRHS Fund Raiser - Field Seminar and Station Visit
Message-ID: <1575066.1306793678371.JavaMail.root@elwamui-cypress.atl.sa.earthlink.net>

>Maritime Radio Historical Society Fund Raiser - Field Seminar and Station Visit

>
>Date: 11 July 2011

As we used to say about wheels up landings, "there are those who have and those who will". Sorry but I'm now one of those who have - given the wrong date for an event, that is.

The correct date is 11 June 2011, not July. I say again, 11 June.

Time: 11am - 4pm

Sorry for the error and thanks to readers who brought it to my attention.

RD

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Richard Dillman
Chief Operator, Coast Station KSM
Maritime Radio Historical Society
http://www.radiomarine.org
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From wb0eq at yahoo.com Mon May 30 18:45:57 2011
From: wb0eq at yahoo.com (John Sehring)
Date: Mon, 30 May 2011 15:45:57 -0700 (PDT)
Subject: [BoatAnchors] Source of BA audio manuals FYI
Message-ID: <350819.37050.qm@web45608.mail.sp1.yahoo.com>

I came across this site for vintage BA audio equipment manuals, both SS and tubed. They seem to have a huge collection. Sort of a nicely quirky site.

http://www.stereomanuals.com/index.htm

They offer repros and some NOS manuals.

No commercial connection here although I did just now order a service manual for a really obscure piece.

--John Sehring VE6/WB0EQ Okotoks, Alberta Canada